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PERSIAN GULF PILOT.  
THIRD EDITION  
1890

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THE  
PERSIAN GULF PILOT,  
COMPRISING  
THE PERSIAN GULF, GULF OF OMÁN;  
AND  
MAKRÁN COAST.

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ORIGINALLY COMPILED BY  
CAPTAIN C. G. CONSTABLE & LIEUTENANT A. W. STIFFE,  
LATE INDIAN NAVY.

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THIRD EDITION.

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PUBLISHED BY ORDER OF THE LORDS COMMISSIONERS OF THE ADMIRALTY.

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LONDON:  
PRINTED FOR THE HYDROGRAPHIC OFFICE, ADMIRALTY;  
AND SOLD BY  
J. D. POTTER, AGENT FOR THE SALE OF ADMIRALTY CHARTS,  
31 POULTRY, AND 11 KING STREET, TOWER HILL.  
1890.

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## ADVERTISEMENT TO THIRD EDITION.

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The Persian Gulf Pilot contains sailing directions for the Persian gulf, the gulf of Omán, and the Arabian coast, as far as Ras al Hadd; also the Makrán coast between cape Monze and Ras al Kuh.

The Gulfs were originally surveyed by officers of the Indian Navy in 1821-8; subsequently Commander Constable and Lieutenant Stiffe, of H.M. Indian Navy, were employed in the *Euphrates*, 1857-8, and *Marie*, 1858-60, in revising the charts. It is from their experience and remark books that this portion of the work was compiled, and published in 1864.

The directions for the Makrán coast (originally published in 1874 as "Persian Gulf Pilot Supplement") were written by Lieut. A. W. Stiffe, in most part, from personal experience.

The second edition, in which the above Supplement was incorporated, was prepared by Captain G. H. Inskip, R.N., in 1883. The present edition has been revised by Captain A. W. Stiffe, from the most recent information received from the Government of India, also that resulting from the visits of Her Majesty's ships and his personal experience.

By the publication of this work, all Notices to Mariners relating to it, inclusive of No. 247 of 1888, are cancelled.

W. J. L. W.

Hydrographic Office, Admiralty, London,  
April 1890.

LIST OF WORDS OF FREQUENT OCCURRENCE IN THE CHARTS  
AND SAILING DIRECTIONS.

<i>Arabic.</i>	<i>English.</i>	<i>Arabic.</i>	<i>English.</i>
✓ Aich or Aik	A hard bank.	Khor	..... A creek or narrow inlet of the sea, a strait; also a deep channel between shoals.
Abu or Bu.	Father of, <i>i.e.</i> , producing or abounding in, also large.	Khuwair,	diminutive of Khor.
✓ Bander	..... A landing place, a sheltered anchorage, whether from all winds or from one quarter only.	Kuh (Persian)	A mountain or hill.
Bar	..... Territory or country.	✓ Marakka	... A shoal with soft bottom.
Bab	..... A narrow strait or gut, literally a door or gate.	✓ Najwa	..... A shoal.
✓ Dúhat	..... A bay.	Ras	..... A cape, also a projecting point either above or under water. (Pl. Rúús).
✓ Fasht	..... A reef of rocks.	✓ Rak, Rakat.	Hard bank, shoal but no overfalls; not dangerous.
✓ Kubba	..... A deep water bay or inlet.	Sífa	..... Sandy beach.
✓ Kassár	..... A rock either above or below water.	✓ Shatt	..... Fresh water river.
✓ Hadd	..... A spit of sand, or low sandy point.	✓ Shur	..... Low clay hills.
Hálat	..... Sand bank dry at low water.	Umm	..... Mother of, similarly used to Abu; this is often joined to the following word by omitting the u, and simply prefixing m, as Umm-Gheir contracted to Magheir.
Jebel	..... A mountain, also a hill.	Wadi	..... A valley, or water-course.
(Pl. Jebál).			
Jezírat or }	An island, sometimes a peninsula.		
Jezírá }			
✓ Jezáir,	plural of Jezírat.		

The words al, ar, as, az, an, ad, at, which precede many of the names, are different sounds of the Arabic definite article.

The letters g j and y, also g and k are often permutable in the names used in this memoir, according to the dialect of the speaker; also the letters l and r, p and f are used indifferently.

COINS, WEIGHTS AND MEASURES.

The current coin in Persia is the kerán, a silver coin, of which, in 1887, 245 were worth 100 Indian rupees. The pound sterling varied in value from 33½ to 35½ keráns. The tomán (gold) is worth 10 keráns. The subordinate copper coins are; 10 ghaz = one shahi; both nominal

20 shahi = one kerán. The value of this coin is much less than formerly, the coinage having been debased, and this is liable to recur.

There is no national Arabian coinage; the current money is the Spanish or German dollar, worth about 4s. 6d. The Government rate of exchange is 100 dollars to 217 India rupees, but varies from 212 to 225. The copper coins used are the "pice," of the Government of India, which pass at Maskat at an arbitrary value, which fluctuates according to the supply, &c.

The India rupee will, however, pass current everywhere (perhaps at a small loss). Ships should be provided with it, or be able to draw bills on Bombay, which are generally at a premium in Bushire.

English gold is not known, but could be changed by the English merchants at Bushire and at Basra, probably at a premium.

The standard of weight is called a maund, or man, and varies considerably; at Maskat a maund of about  $8\frac{3}{4}$  lbs. is used, at Bushire the common maund is about  $7\frac{3}{4}$  lbs., and a Hashim maund 124 lbs. Every town has a different maund.

The liquid measure is the English gallon, which is understood at Bushire, Básidu, and where they are accustomed to English vessels.

Water is charged so much per cask; the price varies from one kerán per water cask of 50 gallons (hogshead) to  $2\frac{1}{2}$ , according to the distance it has to be brought.

The Arabs have very vague ideas about distance; there appears to be no Arab measure of distance corresponding to a mile or league; the only approach to it is what they call a zam, which varies according to the ideas of the person using it. It may be from 7 to 10 miles. The Arabs give a definition to the effect that it is the distance at which a ship may be seen. Distances by land are estimated by them as so many days' journey, but you must ascertain whether your informant means for a horseman or laden camel.

The Persian standard of measure is the farsakh; it is about a nautical league, or 6,000 yards. It varies in different parts of the country from  $3\frac{1}{2}$  to 4 statute miles, and is divided into 6,000 gaz, a measure of about 40 inches.

On the Makrán coast the Indian rupee, powla, and copper pie, the Maskat (German) dollar, and Persian keráns all pass current, the latter chiefly in the western districts. The Indian coinage is now probably best known. Some Venetian gold coins are also in circulation.

The unit of weight on this coast is the maund or mán, which varies as follows: \* Gwádar  $10\frac{1}{2}$  lb., Chahbár 11 lb., Pasni  $9\frac{1}{2}$  lb. It is divided into 24 parts, called kiass. The Indian maund, or English weights, are known at the telegraph stations.

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\* Col. Ross' Memoir.

## SYSTEM OF ORTHOGRAPHY.

As far as has been found possible with existing knowledge the native names in this book are spelt in accordance with the following system, which will be gradually introduced into all Admiralty Sailing Directions.

1. Where native names have been so long written in a form, which, though not in accordance with this system, has become familiar to English eyes from being so spelt in all charts and maps, they are retained, and no European names are changed from the correct orthography.

2. The true sound of the word as locally pronounced is taken as the basis of the spelling.

3. An approximation of the sound is alone aimed at. A system which would attempt to represent the more delicate inflections of sound and accent would be so complicated as only to defeat itself.

4. The broad features of the system adopted are that vowels are pronounced as in Italian and consonants as in English, *every letter being pronounced*. One accent only is used, the acute, to denote the syllable on which stress is laid. This is very important, as the sounds of many names are entirely altered by the misplacement of this "stress."

5. When two vowels come together, each one is sounded, though the result, when spoken quickly, is sometimes scarcely to be distinguished from a single sound, as in *ai, au, ei*.

The amplification of the rules is given below.

Information as to the proper spelling of native names, so as to produce the nearest approximation to the true sound, by this system, is invited.

Letters.	Pronunciation and Remarks.	Examples.
a	<i>ah, a</i> as in <i>father</i> - - - -	Java, Banana, Somáli, Bari.
e	<i>eh, e</i> as in <i>benefit</i> - - - -	Tel-el-Kebir, Oléleh, Yezo,
i	English <i>e</i> ; <i>i</i> as in <i>ravine</i> ; the sound of <i>ee</i> in <i>beet</i> . Thus, not <i>Feejee</i> , but	Levúka, Peru. Fiji, Hindi.
o	<i>o</i> as in <i>mote</i> - - - -	Tokio.
u	long <i>u</i> as in <i>flute</i> ; the sound of <i>oo</i> in <i>boot</i> . <i>oo</i> or <i>ou</i> should never be employed for this sound. Thus, not <i>Zooloo</i> or <i>Zoulou</i> , but All vowels are shortened in sound by doubling the following consonant.	Zulu, Sumatra. Yarra, Tanna, Mecca, Jiddá, Bonny.*
	Doubling of a vowel is only necessary where there is a distinct repetition of the single sound.	Nuulúa.
ai	English <i>i</i> as in <i>ice</i> - - - -	Shanghai.

\* The *y* is retained as a terminal in this word under the rule in paragraph 2 above. The word is given as a familiar example of the alteration in sound caused by the second consonant.

Letters.	Pronunciation and Remarks.	Examples.
au	<i>ow</i> as in <i>how</i> . Thus, not <i>Foochow</i> , but	Fuchau.
ao	is slightly different from <i>au</i> - - -	Macao.
ei	is the sound of the two Italian vowels, but is frequently slurred over, when it is scarcely to be distinguished from <i>ey</i> in the English <i>they</i> .	Beirút, Beilul.
b	English <i>b</i> .	
c	is always soft, but is so nearly the sound of <i>s</i> that it should be seldom used. If <i>Celébes</i> were not already recognised, it would be written <i>Selébes</i> .	Celébes.
ch	is always soft, as in <i>church</i> - - -	Chingchin.
d	English <i>d</i> .	
f	English <i>f</i> . <i>Ph</i> should not be used for the sound of <i>f</i> . Thus, not <i>Haiphong</i> , but	Haifong, Nafa.
g	is always hard. (Soft <i>g</i> is given by <i>j</i> ) -	Galápagos.
h	is always pronounced when used.	
j	English <i>j</i> . <i>Dj</i> should never be put for this sound.	Japan, Jinchuen.
k	English <i>k</i> . It should always be put for the hard <i>c</i> . Thus, not <i>Corea</i> , but	Korea.
kh	The Arabic guttural - - -	Khan.
gh	is another guttural, as in the Turkish -	Dagh, Ghazi.
l	} As in English.	
m		
n		
ng		
	has two separate sounds, the one hard as in the English word <i>finger</i> , the other as in <i>singer</i> . As these two sounds are rarely employed in the same locality, no attempt is made to distinguish between them.	
p	As in English.	
ph	As in <i>loophole</i> - - -	Mokpho,
th	Stands both for its sound in <i>thing</i> , and as in <i>this</i> . The former is most common -	Chemulpho.
q	should never be employed; <i>qu</i> is given as <i>kw</i>	Bethlehem.
r	} As in English.	Kwangtung.
s		
t		
v		
w		Sawákin.
x		
y		
	is always a consonant, as in <i>yard</i> , and therefore should never be used as a terminal, <i>i</i> or <i>e</i> being substituted	Kikuyu.
	Thus, not <i>Mikindány</i> , but	Mikindáni.
	nor <i>Kwaly</i> , but	Kwale.
z	English <i>z</i> - - -	Zulu.
	Accents should not generally be used, but where there is a very decided emphatic syllable or stress which affects the sound of the word, it should be marked by an <i>acute</i> accent - - -	Tongatábu, Galápagos, Paláwan,

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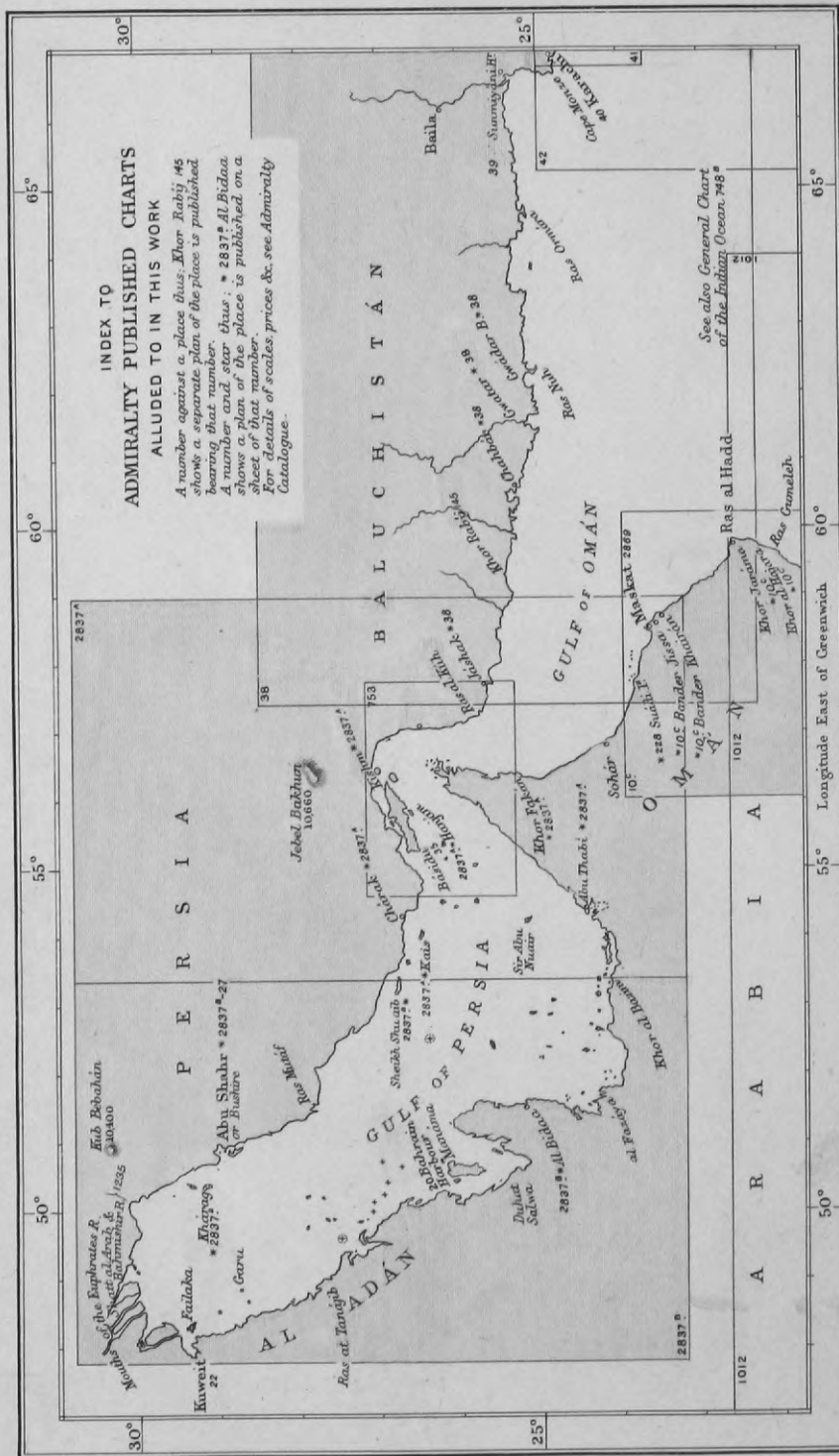
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EXCEPT WHERE MARKED AS TRUE.**

**THE DISTANCES ARE EXPRESSED IN SEA MILES OF  
60 TO A DEGREE OF LATITUDE.**

**A CABLE'S LENGTH IS ASSUMED TO BE EQUAL TO 100  
FATHOMS.**

**THE SOUNDINGS ARE REDUCED TO LOW WATER OF  
ORDINARY SPRING TIDES.**





Corrected to April 1890.

Nº 8<sup>A</sup> Persian Gulf Pilot

# INFORMATION RELATING TO CHARTS, SAILING DIRECTIONS, AND THE GENERAL NAVIGATION OF H.M. SHIPS.

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## ON THE CORRECTION OF CHARTS, LIGHT LISTS, AND SAILING DIRECTIONS.

There are three descriptions of publications as guides to navigation—the charts, the sailing directions, and the light lists—which are all affected by the continual changes and alterations that take place.

Of these the charts should always be, so far as our knowledge permits, absolutely correct to date; and the light lists should be noted for the recent alterations, though space will not permit of full details being always inserted; the sailing directions, however, cannot, from their nature, be so corrected, and *in all cases where they differ from charts, the charts must be taken as the guide.*

*Charts.*—When issued to a ship on commissioning, the charts have received all necessary corrections to date. As sent from the Hydrographic Office they are, as a rule, fresh from the plates. They then receive such corrections by hand in the depôts as are required, and are so issued to the ships.

All small but important corrections that can be made by hand are notified by Notices to Mariners, and should at once be placed on the charts to which they refer.

Large corrections that cannot be conveniently thus made are put upon the plates, and fresh copies are issued to the ships to replace the others, which are directed to be destroyed to prevent the possibility of their being used in the navigation of the ship.

The dates on which these large corrections are made are noted on the chart plates in the middle of the lower edge; those of the smaller corrections at the left-hand lower corners.

In all cases of quotations of charts, these dates of corrections should be given, as well as the number of the chart, in order that

at the Admiralty it may be known what edition of the chart is referred to.

*The Light Lists*, annually published at the beginning of each year, are not corrected in the depôts before issue, but appendices are issued every two months, giving the alterations that have taken place, copies of which are put into the chart boxes.

It is the duty of the navigating officer when he receives the set of charts to make notations in the light lists from these appendices, and from the Notices to Mariners in the box ; and to keep them so corrected from time to time.

*The Sailing Directions* are not corrected before issue, except occasionally for very important new rocks or dangers. Hydrographic Notices and Supplements referring to each volume are published from time to time.

Supplements contain all the information received up to date since the publication of the volume to which they refer, and cancel all previous Hydrographic Notices.

Hydrographic Notices contain all information up to date since the publication of the volume, or since the last Supplement or Hydrographic Notice, but endeavour is made to issue no more than one of these affecting each volume, and, on the collection of fresh information, to include the former Notice in a Supplement.

The existence of Supplement or Hydrographic Notices is to be noted, in the tabulated form now being placed for the purpose inside the cover of each volume, in cases when such notations have not been made before issue, and also on receipt of further Notices after commission.

Notes should be made in the margin of the volume of sailing directions affected, as references to the Supplements or Hydrographic Notices when the latter are printed on both sides.

To enable the books to be more conveniently corrected, however, such Supplements and Hydrographic Notices as are of moderate size are now being printed on one side only, and two copies are issued to each ship ; one to cut up, the slips being pasted in at the appropriate place ; the other to retain intact for reference.

To make these notations or paste in these slips is one of the early duties of a navigating officer after drawing his box of charts and



books, and similar notes are to be made from Notices to Mariners that may thereafter be received.

It must, however, be thoroughly understood that sailing directions will never be correct in all details, except up to the date of the last Hydrographic Notice or Supplement, and that, as already stated, when differences exist, the chart, which should be corrected from the most recent information, should be taken as the guide ; for which purpose, for ordinary navigation, they are sufficient.

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## THE USE OF CHARTS AS NAVIGATIONAL AIDS.

*Accuracy of a Chart.*—The value of a chart must manifestly depend upon the accuracy of the survey on which it is based, and this becomes more important the larger is the scale of the chart.

To estimate this, the date of the survey, which is always given in the title, is a good guide. Besides the changes that, in waters where sand or mud prevails, may have taken place since the date of the survey, the earlier surveys were mostly made under circumstances that precluded great accuracy of detail, and until a plan founded on such a survey is tested, it should be regarded with caution. It may, indeed, be said that, except in well-frequented harbours and their approaches, no surveys yet made have been so minute in their examination of the bottom as to make it certain that all dangers have been found. The fullness or scantiness of the soundings is another method of estimating the completeness of a chart. When the soundings are sparse or unevenly distributed, it may be taken for granted that the survey was not in great detail.

Blank spaces among soundings mean that no soundings have been obtained in these spots. When the surrounding soundings are deep it may with fairness be assumed that in the blanks the water is also deep ; but when they are shallow, or it can be seen from the rest of the chart that reefs or banks are present, such blanks should be regarded with suspicion. This is especially the case in coral regions and off rocky coasts, and it should be remembered that in waters where rocks abound it is always possible that a survey, however complete and detailed, may have failed to find every small patch.

A wide berth should therefore be given to every rocky shore or patch.

*Fathom Lines a Caution.*—Except in plans of harbours that have been surveyed in detail, the five-fathom line on most Admiralty charts is to be considered as a caution or danger line against unnecessarily approaching the shore or bank within that line, on account of the possibility of the existence of undiscovered inequalities of the bottom, which nothing but an elaborate detailed survey could reveal. In general surveys of coasts or of little frequented anchorages, the time required for such a detailed examination does not permit of its execution, nor do the necessities of the case demand it.

The ten-fathom line is, on rocky shores, another warning, especially for ships of heavy draught.

Charts where no fathom lines are marked must be especially regarded with caution, as it generally means that soundings were too scanty and the bottom too uneven to enable them to be drawn with accuracy.

*Distortion of Printed Charts.*—The paper on which charts are printed has to be damped. On drying distortion takes place, from the inequalities in the paper, which greatly varies with different paper and the amount of the original damping; but it does not affect navigation. It must not be expected that accurate series of angles taken to different points will always exactly agree, when carefully plotted upon the chart, especially if the lines to objects be long. The larger the chart the greater the amount of this distortion.

*Caution in using small Scale Charts.*—In approaching the land or dangerous banks, regard must always be had to the scale of the chart used. A small error in laying down a position means only yards on a large scale chart, whereas on a small scale the same amount of displacement means large fractions of a mile. This is particularly to be observed when coming to an anchor on a narrow ledge of convenient depth at some distance from the shore.

For the same reason bearings to objects near should be used in preference to objects farther off, although the latter may be more prominent, as a small error in bearing or in laying it down on the chart has a greater effect in misplacing the position the longer the line to be drawn.

*Lights.*—All the distances given in the Light Lists and on the charts for the visibility of lights are calculated for a height of an observer's eye of 15 feet. The table in the Light List affords a means of ascertaining how much more or less the light is visible should the

height of the bridge be more or less. The glare of a powerful light is often seen far beyond the limit of visibility of the actual rays of the light, but this must not be confounded with the true range. Again, refraction may often cause a light to be seen farther than under ordinary circumstances.

When looking out for a light at night, the fact is often forgotten that from aloft the range of vision is much increased. By noting a star immediately over the light a very correct bearing may be afterwards obtained from the standard compass.

*Fog Signals.*—Sound is conveyed in a very capricious way through the atmosphere. Apart from wind, large areas of silence have been found in different directions and at different distances from the origin of a sound, even in clear weather. Therefore too much confidence should not be felt in hearing a fog signal. The apparatus, moreover, for sounding the signal often requires some time before it is in readiness to act. A fog often creeps imperceptibly towards the land, and is not observed by the people at a lighthouse until it is upon them; whereas a ship may have been for many hours in it, and approaching the land. In such a case no signal may be sounded. Taken together, these facts should induce the utmost caution in closing the land in fogs. The lead is generally the only safe guide.

When sound has to travel against the wind, it may be thrown upwards; in such a case, a man aloft might hear it when it is inaudible on deck.

*Tides and Tidal Streams.*—In navigating coasts where the tidal range is considerable, caution is always necessary. It should be remembered that there are indraughts to all bays and bights, although the general run of the stream may be parallel to the shore.

The turn of the tidal stream off shore is seldom coincident with the time of high and low water on the shore. In open channels, the tidal stream ordinarily overruns the turn of the vertical movement of the tide by three hours, forming what is usually known as tide and half-tide, the effect of which is that at high and low water by the shore the stream is running at its greatest velocity.

In crossing a bar or shallow flats, the table at page 98 of the Tide Tables will be found of great assistance in calculating how much the water has risen or fallen at any hour of the tide.

On coasts where there is much diurnal inequality in the tides, the

amount of rise and fall can never be depended upon, and additional caution is necessary.

It should also be remembered that at times the tide falls below the level of low-water ordinary springs. This always occurs in temperate regions at the equinoxes, but wind may produce it at any time, and the amount varies with locality. When the moon's perigee coincides with the full or new moon the same effect is often produced.

*Fixing Position.*—The most accurate method of fixing a position relative to the shore is by angles between well-defined objects on the chart. All ships are now being supplied with a station pointer, and this method should be used whenever possible.

Two things are, however, necessary to its successful employment. First, that the objects be well chosen ; and second, that the observer is skilful and rapid in his use of the sextant.

For the former, reference can be had to the pamphlet on the use of the station pointer, which is in every chart box.

The latter is only to be obtained by practice.

It will readily be seen that in war time, when the compass may be knocked away, or rifle-fire may make it undesirable to expose the person more than necessary, a sextant offers great advantages, as angles can be obtained from any position whence the objects are visible. It is this contingency that makes it especially desirable that all navigating officers should become expert in this method of fixing a ship's position.

The many narrow waters also, where the objects may yet be at some distance, as in coral harbours or narrow passages among mud banks, navigation by sextant and station-pointer is invaluable, as a true position can only be obtained by its means. A small error in either taking or plotting a bearing under such circumstances may put the ship ashore.

It is not intended that the use of the compass to fix the ship should be given up ; there are many circumstances in which it may be usefully employed, but errors more readily creep into a position so fixed.

In all cases where great accuracy of position is desired, angles should invariably be used, such as the fixing of a rock or shoal, or of additions to a chart, as fresh soundings or new buildings. In all

such cases angles should be taken to several objects, the more the better, but five objects is a good number, as the four angles thus obtained not only prevent any errors, but they at once furnish a means of checking the accuracy of the chart itself. In the case of ordinary soundings, it is only necessary to take a third angle now and then ; firstly, to check the general accuracy of the chart as above stated ; secondly, to make certain that the more important soundings, as at the end of a line, are correctly placed.

Sometimes, when only two objects are visible, a compass bearing and sextant angle may be used with advantage. .

In passing near a point of land, or an island, the method of fixing by doubling the angle on the bow is invaluable. The ordinary form of it, the so-called "four-point bearing," when the bearing is taken four points on the bow, and on the beam, the distance from the object at the latter position being the distance run between the times of taking the two bearings, gives an excellent fix for a departure, but does not ensure safety, as the point, and probably the rocks off it, are abeam before the position is obtained.

By taking the bearings of two points and four points on the bow, a very good position is obtained before the object is passed ; the distance of the latter at the second position being, as before, equal to the distance run in the interval.

The use of a danger angle in passing outlying rocks with land behind should also not be forgotten. In employing this method, however, caution is necessary, as should the chart be not accurate, *i.e.*, should the objects selected be not quite correctly placed, the angle taken off from it may not serve the purpose. It should not, therefore, be employed when the survey is old or manifestly imperfect.

In fixing by the compass, it must always be remembered that two bearings only are liable to error. An absolute error may be made in either bearing observed ; errors may be made in applying the deviation ; or errors may creep in in laying them on to the chart. For these reasons, a third or check bearing of some other object, should be taken, especially when near the shore or dangers. The coincidence of these three lines will prevent any mistakes.

The tripod now supplied to all ships to hold the lamp over the standard compass will be found of great service in fixing position at night, as by its aid a bearing can be as accurately taken as in daylight. Its use in connection with ascertaining the change of bearing of an approaching ship's light should not be forgotten.

Amongst astronomical methods of fixing a ship's position, attention is drawn to the great utility of Sumner's method. A Sumner line, that is, a line drawn through the position (obtained by an assumed latitude and longitude by chronometer) at right angles to the bearing of the sun, as obtained from the azimuth tables, gives at times invaluable information, as the ship must be somewhere on that line. A deep cast at the same time may often serve to get an approximate position on the line. An early and very accurate position can be also obtained by Sumner's method, by getting longitude by a bright star at daylight when the horizon is well visible, and another longitude by the sun when a few degrees above the horizon. The Sumner lines drawn through the two positions thus obtained will, if the bearing of sun and star differ three points or more, give an excellent result.

*Current Arrows* on charts only show the most usual or the mean direction of a tidal stream or current. It must never be assumed that the direction of a stream will not vary from that indicated by the arrow. In the same manner, the rate of a stream constantly varies with circumstances, and the rate given on the chart is merely the mean of those found during the survey, possibly from very few observations.

*Change of Variation of the Compass.*—The gradual change in the variation must not be forgotten in laying down positions by bearing on charts. The magnetic compasses placed on the charts for the purpose of facilitating plotting become in time slightly in error, and in some cases, such as with small scales, or when the lines are long, the displacement of position from neglect of this change, may be of importance. The compasses are re-engraved when the error amounts to a quarter of a point, but the chart plates cannot be corrected more frequently from the impossibility of making alterations too often on one spot in a copper plate.

The geographical change in the variation is in some parts of the world sufficiently rapid to need consideration. For instance, in approaching Halifax from Newfoundland the variation changes  $10^{\circ}$  in less than 500 miles. The variation chart should be consulted on this head.

For later information respecting the lights which are described in the Persian Gulf Pilot, 1890, seamen should consult the Admiralty List of Lights in South Africa, East Indies, China, &c. This list is published early in the current year, corrected to the preceding 31st December.

SO 10981.





# THE PERSIAN GULF PILOT.

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## CHAPTER I.

GENERAL DESCRIPTION. WINDS, WEATHER, CURRENTS,  
CLIMATE. METEOROLOGY. PRODUCTS. PASSAGES.

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**Introductory.**—The Gulf of Persia (Khalíj al Fars of the natives) is the large inland sea bounded on the north-east by Persia, and on the south by Arabia; the gulf of Omán is the name given to the funnel-shaped entrance between the province of Omán and the opposite coast of Makrán\*

The peninsula of Arabia is called by the Arabs, Bar al Arab or Belad al Arab; whilst to the Persians and the natives of Hindustan it is known as Arabistán (country of the Arabs). Persia is probably a corruption of Fars (a province of that country), handed down to Europeans from the time of the Greeks, who called it Persis, and the name has since been applied to the whole country. The Persians call their country Irán, the Arabs, Bar al Ajam (the inhabitants being called by them Ajam).

The length of the Persian gulf in a straight line, from the coast of Omán to the Basra river, is about 450 miles. Within the gulf, its breadth varies from 100 miles between Ras Rakkin and Ras Mutáf, to 180 miles between the coast of Lar and the extreme southern bight called Subákha. At its entrance it is much contracted by the projecting promontory called Ruús al Jebál, and at the narrowest part is only 29 miles in width (between Ras Musandam and the nearest point of the coast opposite). Within a line drawn due East from Ras Musandam, it comprises an area of nearly 70,000 square miles.

The two sides of the gulf differ widely in character, the Persian shore being mountainous, generally safe to approach, and having deep water close to it; whilst the Arabian shore, excepting the mountains of the Ruús al Jebál, is exceedingly low, and fronted by

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\* See Admiralty chart, Persian gulf, No. 2,837 *a, b*; scale,  $m = 0.08$  of an inch; also Arabia, N.E. coast, No. 10 *c.*; scale,  $m = 0.1$  of an inch, and Maskat to Karáchi, No. 38; scale  $m = 0.08$  of an inch.

reefs and shoals to a great distance from the shore, for nearly its whole length, forming the well-known Pearl banks. Ships, therefore, merely passing up and down the gulf, always keep on the Persian coast, seldom standing over farther than the edge of this shoal water.

On both coasts the inhabitants are very poor, and the few supplies are only obtainable in small quantities. Wood is scarce, and water can only be obtained in a vessel's own casks. The stranger should bear in mind that an Arab is accustomed to drink very bad water, and his ideas of what is good water might lead to disappointment. The water is generally better after the winter rains, and more scarce or brackish in autumn.

The basin of the Persian gulf is probably silting up gradually at the northern end, owing to the great amount of alluvium poured into it by the rivers there. It does not, however, appear from comparison with the last survey that it is the case to anything like the extent estimated by some modern writers. We have hardly sufficient data to enable us to estimate the rate of growth of the delta with any degree of certainty.

The water of the upper part of the Persian gulf is much saltier than that of the ocean.

The gulf of Omán increases in breadth from 29 miles at the part above mentioned, to its eastern end (a line from Maskat to the point of the Makrán coast north of it may be considered the eastern limit), where it is about 110 miles broad. From Maskat to Musandam it is about 200 miles in length. Within these limits its area is about 14,000 square miles.

The gulf of Omán is generally free from danger, with deep water not far from either coast, and backed by high mountains within no great distance of the shore.

The south coast of the gulf of Omán from the Ruús al Jibál nearly to Maskat, is fertile, it produces much fruit, grapes, limes, peaches, apples, &c., and is well grown with date trees. It extends in a wide plain to the foot of the mountains, and is called the Bátina, or Level coast.

**The South-western**, or Arabian side of the gulf, from the river (Shatt al Arab) to the Ruús al Jebál, is mostly of white sand, a perfect desert, having extensive tracts quite uninhabited. Near the towns, however, there are generally more or less extensive date groves. Water is scarce and bad, and obtained in shallow wells near the sea.

The population is exclusively Arab; in the towns they are civil to Europeans, and may be trusted; but it is not safe to land unarmed away from the towns on the mainland, on account of the Bedawin

who are occasionally met with ; and who attack, for the sake of plunder, even their own more civilized countrymen (the Arabs of the towns).

The navigation of this coast, between the river and Omán, is seldom attempted at night ; vessels should anchor at dark, if possible.

**Makrán Coast.\***—The region of Makrán, properly so called, extends from the Malán or Hára mountains to the neighbourhood of the Sadaich river, its boundaries not being very clearly defined ; and at the present time it may be considered rather a geographical than a political division. The whole coast between Jáshak and Sunmiyáni, or even to the Habb river has, however, become generally known as the Makrán coast, and this designation is here retained as a convenient one. ch

The country is subdivided into a number of petty states, under the control of chiefs, hitherto quasi-independent, but who are now all under the sovereignty of Persia, or of the Khan of Kalát, their dependence on these powers being, however, confined almost entirely to the payment of a certain amount of tribute. Of the possessions of the Maskat Arabs on this coast, Gwádar, with its small adjoining district, is the only place now held by them.

The inhabitants are of different Makráni and Balúchi tribes, or more properly, clans, and vary much, both in their physical and moral qualities. They are a singularly poor, simple, and primitive race, hospitable to strangers, and faithful in the performance of duties they may undertake. Although brave, they are averse to close fighting in their numerous blood feuds. Many are found among the mercenaries of the petty independent states of India. They are capable of enduring great fatigue and privation, are friendly, and now accustomed to Europeans. The language is a dialect of Persian, and approximates the more nearly to that tongue as the western frontier is approached ; it is hardly a written language, and Persian is generally used in correspondence.

In Gwádar, and some other places on the coast, there are also a few Arab settlers, and Banyans from Sind or Kach, by whom the very limited trade of the country is chiefly carried on.

The population is everywhere sparse, and has been estimated not to exceed 200,000 up to the 27th parallel of latitude. They live in mat huts, which are easily removeable, so that a village is often merely a temporary encampment. In more permanent settlements there is a

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\* Partly compiled from Colonel Ross' valuable "Memorandum on Makrán."

See Admiralty chart, Maskat to Karáchi. No. 38 ; scale,  $m=0.08$  of an inch.

tower or fort in addition to the huts, and it is only at the towns of Gwádar, Ormára and Sunmiyáni that a proportion of masonry or even mud houses is found.

**General aspect of Coast.**—From Jáshak to Sunmiyáni the coast extends in a general east and west direction for nearly 500 miles, in an almost direct, but somewhat convex line. Owing to the small rainfall, the salt nature of the soil, and the physical conformation of the country, the coast is almost entirely desert, and presents a succession of arid clay plains, impregnated with saliferous matter, and intersected by water courses. From these plains rise precipitous table-hills, with most fantastic peaks and pinnacles, varying in height above the sea from 2,000 feet at Ras Malán to hillocks of 20 or 30 feet high. Farther inland other ranges of mountains of varying height extend parallel to the coast and to each other, all appearing bare of vegetation.

The coast line is deeply indented into bays, but its most characteristic feature is the repeated occurrence of promontories and peninsulas of white clay cliffs capped with coarse limestone, or shelly breccia, which all approach the table-topped form. The intermediate coast is low, sometimes with high white sand-hills, or low sand-hills with small bushes and tufts of grass, in many places a mere strip of very low sand, with extensive salt water swamps behind it. Owing to the excessive lowness of such parts of the coast, the stranger is very liable to underestimating his distance off shore, so as even to incur danger.

No vegetation is to be seen except here and there a clump of date trees, indicating the vicinity of a village or settlement. There are no perennial rivers, and near the sea, the streams, which are frequently dry or nearly so, except after rain, become salt-water creeks, which are only navigable by small boats.

**The North-Eastern**, or Persian, side of the gulf, presents in its whole extent, from the delta of the Euphrates and other rivers to the Makrán coast, a series of rugged, precipitous mountain ranges, one behind the other; running generally nearly parallel to the coast, and to each other.

The head of the gulf is all of very low alluvial land, and difficult even to sight.

The mountain ranges increase in height as they recede from the sea; no kind of vegetation can be seen from sea on their bare and deeply furrowed sides, and being visible at great distances, they form excellent landmarks. They are separated by wide valleys, and the belt of low land of varying width between them and the sea is called by the Persians the Germsír, or hot district, which, being at the

southern foot of the mountains, watered by no river, and its summer heat tempered by no rain, well merits the appellation, as, with the exception of the opposite coast, it is in summer one of the hottest places in the world.

The small seaport towns are almost exclusively inhabited by Arabs, who originally, owing to intestine commotions in their own country, or to a spirit of enterprise, came from the opposite coast, and formed settlements here. At the larger places an admixture of Persians is found, and the rural population is exclusively Persian ; but it is not a maritime nation, all the boats sailing from Persian ports being manned by Arabs.

There are no rivers of any importance, excepting the great rivers at the head of the Gulf, and water is generally only found in wells, or reservoirs of rain water. There are no good harbours for large ships, though there are plenty of roadsteads or anchorages sheltered against one or other of the prevailing winds.

The coast is uninviting and barren, except near the villages, where date groves are generally found, with a small amount of cultivation.

**SOUNDINGS.**—As on the south-east coast of Arabia, in the Adriatic, and in other inland seas, the soundings in the gulf are deep where the land near the sea is high, and where it is low the depths are less.

In the central part of the gulf of Omán the water is deep, and the 100-fathoms line of soundings is, on an average, from about 10 to 15 miles from the shore. Off Maskat the bed of the sea sinks rapidly to a depth of 1,000 and 2,000 fathoms. Towards the narrow entrance of the Persian gulf the depths decrease to 70 and 50 fathoms, but off Musandam there is a depression in the bottom, as near that islet the water is 100 fathoms deep. Within the gulf the depths rarely exceed 40 to 50 fathoms, decreasing to 30 and 20 towards the head while on the Pearl banks, which are about one-third of the area of the gulf, the depths are all under 20 fathoms. Across the head of the gulf, the 20-fathoms line runs about 50 miles distant from the entrances to the rivers. Within the 20-fathoms line, and especially on the Arabian coast, the soundings are irregular, with shallow patches, banks, and shoals.

The bottom on the Persian coast, and in the deep part of the gulf, is generally mud ; and on the Pearl banks, hard sand, coral, and rock ; and on the Arab coast frequently white clay, especially north of Bahrain.

On the Makrán coast the bank of soundings, after leaving the great bank extending off the Indus, is narrow, and ends abruptly, in

some parts quite precipitously, at its outer edge, which is in general about 15 miles from the shore, but in some places only half that distance. The soundings are regular, the bottom being rock, sand and mud near the shore, and mud or clay beyond the 12-fathoms line; they generally increase gradually up to 20-fathoms, and beyond that depth very rapidly. The coast is unusually clear of dangers, and easy to navigate, the only dangers existing, viz., Webb bank, Báklang rock, Maidáni flat, and the two shoals westward of Jáshak, will be found described in their place. In some parts the depth of water increases from 20 to 200 or 300 fathoms in about a ship's length.

**ISLANDS.**—Within the Persian gulf, and off the Arabian coast, are numerous islands of various sizes; the two largest are Kishm, 60 miles in length, with an extreme breadth of 19 miles; and Bahrain, which is 27 miles in length and 10 miles in breadth; while the smallest are mere sandy islets about 100 yards across. Many of them are of volcanic origin, in part at least. There are anchorages at most of the islands, sheltered in one direction; but owing to the liability, in winter, of the wind shifting suddenly to the opposite quarter, sailing vessels should not anchor too close; and be ready to move from what may become a dangerous lee-shore, at the first symptoms of a change.

The only islets lying off the Makrán coast, viz., Chúrna, Astálu, and a small one in Gwatar bay, are insignificant and uninhabited, but are good landmarks.

**WINDS.**—The navigation of the gulf in a sailing ship requires great attention. The winds, as in most inland seas, are very uncertain, and blow occasionally with great force down the gulf; and, in winter, also in the opposite direction. They set in without much warning.

**Shamáls.**—The prevailing wind in the gulf is undoubtedly the north-wester, called by the natives' shamál. This wind blows down the gulf, changing its direction with the trend of the coast.

Thus, on the Arabian coast from Kuwait to Bahrain its average direction is N. by W. to N.N.W.; on the Katr coast North to N.N.W.; and on the west coast of Omán W.N.W., veering to S.W. near the entrance of the gulf.

On the Persian coast it blows N.W. by N. down as far as the angle at Jebel Direng, veering to N.W. and W.N.W. between that and Shaikh Shuaib. Off Kais island the direction is about W. by N., and from Jebel Bistána eastward it blows from West to S.W. by W. to the entrance of the gulf.

In the gulf of Omán its general direction is north-west. The shamál blows about 9 months in the year, in the northern half of the Persian

gulf. It blows almost incessantly during June, and part of July (called the Bárih, or great shamál\*), seldom exceeding a moderate gale in force, and at times quite light. Its general duration is 3 days, but it may last 7 days. The worst shamáls often last one day or only a few hours.

During a shamál after rain the air may be clear and sky cloudless, but generally the air is so loaded with dust from the Mesopotamian deserts that a dense mist is the result. This makes the navigation very dangerous, the white surf on the beach being often first seen, while the land is still hidden. In the Shatt al Arab this is sometimes so much the case that neither bank of the river can be seen. Out of sight of land, vessels' decks and rigging get covered with fine dust.

The air during the shamál is generally very dry, and sky cloudless, but in the winter they are sometimes attended at the commencement by rain squalls (often with thunder and lightning), which usually clear off during the breeze.

It veers during the 24 hours a few points, blowing more off the Persian coast, or from the northward at night, and from the sea, or more from the westward in the day, which a vessel should take advantage of when working against it. It may set in at any hour of the day or night, and generally suddenly.

The barometer cannot be said, as a rule, to give any warning of the approach of a shamál; if it was low before, it will begin to rise as soon as the shamál sets in, but generally not before, and continue high during the whole duration of the gale. It sometimes falls before a bad winter shamál, but rises again after the first burst of the gale. The barometer in the surveying vessel was not at all affected by one of the heaviest shamáls, either before, during, or after it. This breeze is sometimes preceded by the drying up of the dew by night, or the dampness of the air ceasing, which is a pretty sure sign.

A heavy swell from the N.W., especially in the southern part of the gulf, is often the precursor of a shamál, although such a swell sometimes occurs without any wind following it.

Some of the severest winter shamáls set in during fine weather, with no warning except a heavy bank in the north-west quarter an hour or two previously, which rolls down and gradually obscures all objects, and yet this occurs sometimes without any wind following. A vessel should, however, by no means neglect such a warning.

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\* The Arabs say there are 40 days of this wind, as also 40 days of extreme heat and 40 days of extreme cold. Forty has always been a favourite indefinite number with the Easterns. The Persians call the ruins of Persepolis "Chehl Manár," the forty pillars. The Centipede they call "Chehl pai," the forty-footed.

Vessels should be prepared, in winter, during a S.E. gale for a sudden shift to the N.W., especially at night, as the shamál often blows then very strong.

The worst of the shamál is always soon after the beginning.\* It does not always extend over the whole gulf, and often lulls for a short time about daylight. In the summer shamáls the wind rarely exceeds the force of a moderate gale (7), but in the winter they are often fresh gales (8), or at times hard gales (9). It is generally advisable for a sailing ship or an under-powered steam vessel to seek shelter, if possible, during the strength of a shamál, as little or no way will be made against it; the Persian shore and islands offer many suitable places of shelter.

**Kaus.**—During the winter months, south-easters, called by the natives sharki, or kaus, alternate with the north-westers; and, like the shamáls, follow to a certain extent the direction of the coast; they only blow strong from December to April.

The kaus is generally accompanied by thick, gloomy weather, with hard squalls, and often much rain, sometimes thunder and lightning. The atmosphere is moist, and the barometer generally low. With a falling barometer and cloudy threatening weather, a kaus may be expected in the above months, but timely warning is not always to be expected, although the barometer always falls during the gale, if not before. It seldom blows more than three days, its strength is generally a moderate gale (7), but at times it blows a fresh gale (8 or 9); the strongest often only last one day. This breeze is generally strongest on the last day.

When the wind begins to veer to the southward the kaus is over, and is often succeeded by a shamál, almost immediately, or it may blow hard for a short time at South or S.W., and so die away, no shamál occurring for several days. The wind sometimes, however, after blowing hard at S.W., chops round suddenly to N.W., when a strong shamál will follow. The notion that a kaus is always followed by a shamál is not correct.

If a sailing vessel has anchored for the kaus in an anchorage open to the shamál, she should weigh immediately the kaus is found to be over, as she may otherwise have to ride out a N.W. gale on a lee shore. Easterly winds are of most frequent occurrence in the southern part of the gulf.

**Nashi.**—In the winter, particularly in the southern part of the

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\* Navigating Sub-Lieutenant C. A. Morshead, H.M.S. *Nimble*, 1875, with reference that "The worst of the shamál is always at the beginning," remarks:—"The regular "shamál, of from 2 to 3 or 5 days' duration, we have found blows the hardest about "the middle of its career."



gulf, strong breezes are experienced from N.E., called nashi ; they are attended by dark cloudy weather, and generally rain. The natives make a distinction between these breezes and the kaus. The barometer is not affected by this breeze, being generally high, and if so, it will fall a little when the nashi is over. There is sometimes a dense haze before a nashi, caused by the dust blown off the land. This breeze often blows three or five days, but frequently only one day : after the first day the air becomes clearer, possibly owing to rain on the land. The nashi blows in gusts with frequent lulls, and if a 3 days gale, is strongest on the third day.

The nashi blows very strong in the gulf of Omán, and is much dreaded by native craft, as the Bátina coast is a lee shore, and there is no shelter.

**Suhaili.**—The south-wester, called by the natives suhaili, is much feared by them, as it blows into nearly all the sheltered anchorages on the Persian shore. It lasts generally only a few hours, and often follows the kaus, but sometimes occurs after fine weather; it is accompanied by rain, and is preceded by masses of clouds rising from the south with lightning. It is not of frequent occurrence, and only happens in the winter months. It blows all over the gulf, and also in the gulf of Omán, especially off Ras al Kuh.

**Squalls.**—At the change of the seasons in autumn, very severe squalls may be expected, called by the Arabs Laheimar ; it does not appear that the direction of these squalls is fixed.

The period assigned to them by the Arabs is from the 15th of October to the 5th November, during which time no native vessels put to sea, until either the squall is over, or until the 5th November is past, if no bad weather happens before that date. If they do not occur before the 5th of November the Arabs consider that none will happen after that date, until the ordinary bad weather of the winter sets in. An unusual degree of electrical action is observable during this period ; St. Elmo's fire has been observed on board ship at this season. The air is often wonderfully clear about the time of these squalls.

In Básidu road very violent squalls have been experienced from the north in May ; and from the S.E. in July ; but these are not of frequent occurrence. Very heavy squalls from the northward have been experienced in May in the north end of the gulf. In the winter, especially, tremendous gusts blow out of the great valley in the mountains below Maskat, known as the Devil's gap.

**Alternating Winds.**—A succession of squalls from opposite quarters, each lasting only a few minutes, and alternating thus several times, is occasionally experienced.

**Land and Sea Breezes.**—These are very uncertain. In fine weather very decided land winds are experienced, but only near the coast.

Sea breezes are very regular at Bushire in the summer, setting in at 9 a.m. (when there is not a shamál), but land winds there are very light and of short duration.

At Básidu the land winds are strong and last till 10 a.m.; sea breezes are also regular, but do not set in so early as at Bushire.

On the Arabian coast the land winds are often strong in the morning, and come off occasionally in hot gusts. At Kuweit, the sea breezes are regular in fine weather.

**General Observation.**—In the winter the winds are often very local, a shamál blowing at one end of the gulf, while at the other end, or in the central part, it is blowing in the opposite direction or is calm.

At Bushire the wind is often blowing the opposite way to what it is in the Shatt al Arab.

**Gulf of Omán.**—The south-west monsoon is not felt inside Ras al Hadd; as soon as that cape bears South the wind is quite lost, (the same occurs at cape Guardafui). During the north-east monsoon, nashis and shamáls prevail: but in the summer, or during the south-west monsoon, shamáls rarely occur. Calms and light winds prevail, or light south-easterly winds, rendering the passage out of the gulf in a sailing ship very tedious.

**Makrán coast.**—The south-west monsoon sets in at Karáchi with a few days', or even a fortnight's hard blow at S.W. to W.S.W. with cloudy weather, and scud flying overhead, generally between the 6th June and 10th July. It is announced by a falling barometer, and is accompanied or preceded by a heavy swell from the same quarter.

After the first blow it moderates, when strong to moderate or light breezes prevail until the end of August, or sometimes the middle of September, the wind veering at night several points to the westward. The swell continues, and varies from a high to a long low swell according to the weather. Soon after the middle of July there is a lull, clouds bank up with lightning in the East, and a hard squall from the land may be expected, shifting to westward and accompanied by torrents of rain. The weather from May to September is very hazy, so that the land is often not seen until very close.

At Gwádar the wind is less strong than at Karáchi, and the swell longer and more from the southward, the monsoon rain also does not appear to extend further west than Ormára. To westward of Gwádar

the wind decreases, and is felt at Jášhak only as a light south to S.E. breeze accompanied by a long ground swell, causing a surf on the shore.

Land and sea breezes prevail on the coast during the winter months; the land wind blows between N.N.E. and E.N.E., setting in at mid-night or some hours later, and veering gradually to eastward, followed by a calm before noon, or by a light south-easterly air, which veers to S.W. in the afternoon. The land winds prevail from October to February, and are often fresh or strong in November, December, and January. After the latter month they are weak and uncertain, and in April they are sometimes felt as hot winds. The sea breezes are light from October to January, and increase in strength as the season advances, being strong in April and May; they veer several points off the land at night, and are light or die away in the morning.

During December and January, strong north-easters are often experienced accompanied by clouds of dust, and often by gloomy, squally weather, with rain about the end of the year. They last sometimes two to three days, in which case the wind generally lulls in the afternoon, freshening again at night.

The shamál or north-wester of the Persian gulf is experienced at all times of the year near Jášhak, and in the winter months is felt sometimes along the whole coast; more especially in either January or February, a very strong one often blows home to Karáchi, and along the coast southward as far as Bombay. There is generally only one such in the year, and it blows for two or three days, raising a heavy sea, and rendering the anchorage outside Karáchi unsafe. These breezes are accompanied by a thick haze, caused by fine dust carried by the wind, perhaps from the Mesopotamian plains.

In the winter months heavy squalls from N.W. to N.E., with rain, are experienced on the western part of the coast. Heavy squalls from westward occurred on 4th and 7th May 1864, but they appear unusual.

**CYCLONES.**—The cyclones of the Arabian sea do not reach the Makrán coast; their effect is, however, felt in a heavy southerly swell with falling barometer, cloudy, unsettled weather, and, after the storm has passed, a strong breeze or moderate gale at S.W. The effect of bad weather to the southward is always felt in a similar manner, although it does not reach the coast. They appear to end at or near the tropic.

On the 16th September 1872 a severe storm of wind and rain, probably cyclonic, felt previously all up the Malabar coast from Ceylon, was experienced as an easterly gale with rain, along the whole coast as far as Chahbár.

**CLIMATE and WEATHER.\***—The climate of the Persian gulf is one of the most trying imaginable; though perhaps on the whole not unhealthy for Europeans. The intense heat of the summer is aggravated by the humidity of the atmosphere, and the dust raised by every wind; nor are there rains or clouds at this season, as in India, to temper the excessive heat. The Arab coast is hotter and less healthy than the Persian, and the southern end of the gulf hotter than the northern.

In the winter the winds are cold and cutting, and although the temperature is more suited to Europeans, it appears to be the less healthy season.

During June and the first half of July, the heat at the northern end of the gulf is moderated by the almost constant shamál (the air during these months is generally loaded with dust), but from that time to the end of August it is most intense, and with a southerly wind almost insupportable, from the increase of moisture in the air. In the month of August the black bulb thermometer rises on shore to 159° Fahrenheit in the sun. In the shade on board ship its range is small; at Bushire, from 90° to 93° at 4 a.m., to 96° or 98° in the afternoon. At Básidu it is a little higher. In the Shatt al Arab the thermometer is stated by Loftus to have risen to 124° in the shade. The intense heat of the night renders the weather more distressing.

September is but little cooler than August; the nights however are less oppressive, particularly towards the end. The heat of this month is said to be necessary for the maturing of the date crop. October, though still hot, is more favourable; towards the end the squalls, which generally occur, reduce the temperature considerably.

November is generally a beautiful month; fine weather, with often wonderfully clear atmosphere; temperature pleasant.

December is often a fine cool month, similar to the last, unless the bad weather sets in, which it seldom does before the middle of this month. It more frequently comes on at the end of this, or the beginning of the next month, and occasionally does not set in till near the end of January.

January or February are cold and boisterous months. Gales of wind prevail with rain, and what seamen call “bad weather.” The minimum of temperature occurs in the first half of February. March is a pleasant month as to temperature, the weather generally fine and clear, and winds variable. The natives consider the bad weather over after the middle of this month for the south end of the gulf.

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\* Chronometers require looking to frequently, to see that the packing is free from damp and mildew. Tarred oakum has been used with good effect as packing.

In the northern part of the gulf a gale often occurs about the equinox, but intervals of variable winds and fine weather are frequent though some bad weather still occurs).

April is a pleasant month, getting hot towards the end. The weather is generally fine, with moderate shamáls now and then. In the northern part of the gulf a very heavy shamál has occurred in this month, also heavy squalls, or a gale from the eastward. Variable winds, however, prevail, sometimes with rain.

There is seldom any bad weather after the middle of this month.

May.—The weather getting hot in this month. It is generally fine, moderate shamáls frequent; bad squalls have been experienced, but are exceptional.

On the Makrán coast the weather, which, as a whole, may be considered singularly fine and safe for navigation, may be summarized as follows :—

January.—Strong north-easters or land-winds; also squally, N.E. to S.E., with rain at some period in this month; sea breezes, if any, light. Sometimes a strong shamál; atmosphere dry; winds cold and cutting; clouds of dust accompany, and at times precede the strong winds; weather fine, but sometimes gloomy and overcast.

February.—Land breezes are moderate, with light sea breezes, or moderate north-wester; in the course of the month generally one strong shamál or gulf north-wester. Sometimes squally with rain from eastward, shifting to west, at Jáshak, otherwise fine dry weather.

March.—Land winds failing; weather generally fine, but getting damp; sea breezes light to moderate, S.W. veering to W.N.W., or N.W. at night; also strong, or a north-wester, with much dust. Occasionally calms, chiefly in forenoon; weather settled and fine.

April.—Weather very fine but hazy; air very damp; sea breezes N.W. to S.W., occasionally fresh, and, towards the end of the month, strong. Sea smooth, weather much warmer, sometimes hot winds off the land.

May.—Calms in morning, with strong sea breezes; weather hot, and very damp and hazy, with clouds passing rapidly from westward. Generally fine, and water smooth, except the swell due to the sea breezes. Heavy squalls at W.N.W. with rain have occurred. In 1871 strong breezes to moderate gale at S.W. blew during the most part of month, with heavy monsoon swell, following a cyclone on 4th to 6th in latitude 14° N. Near Jáshak, light breezes S.E. to S.W. are experienced with an occasional shamál.

June.—Weather similar to that of May continues, with probably a few days of light airs or hot scorching winds from the land, rendering

the heat very oppressive, until about the middle or latter part of the month, when the monsoon, preceded by a falling barometer and threatening weather, usually sets in on the eastern part of the coast, as a strong W.S.W. breeze or moderate gale, which may last from a few days to a fortnight, and is preceded or accompanied by a heavy swell, out of proportion to the amount of wind. The weather then becomes cooler, the clouds and scud from westward, and the dampness continue. On the western part, light S.E. and south winds prevail, varied by strong breezes from westward, with dust, and high thermometer.

July.—The first burst of the S.W. monsoon is often followed by less boisterous weather; if the monsoon should not set in until this month, it will be preceded by very hot, unpleasant weather. Soon after the middle of the month there is an interval of light winds, after which the rain of this season occurs, generally beginning between the 15th July and 10th August with a squall, and thunder and lightning from N.E. followed by a blow from westward. Lightning seen of an evening to the N.E. at this season is a pretty sure fore-runner of the rain. The duration of the rain is very uncertain, sometimes there is little or none, or it may last only a day, but in 1869 it lasted at intervals from the 19th July to the middle of September. Heavy rain has not been observed west of Ormára, but a little sometimes falls as far west as Gwádar.

On the western part of the coast the heat is excessive in this month, and continues so until the end of September; the winds are generally light at South to S.E., with an occasional fresh hot, wind from W.N.W. The temperature at Karáchi is always much lower after the rain.

August.—Weather much cooler; air clearer and less damp after the rain has fallen; monsoon breeze and swell moderate or light, and wind veers more to westward at night. Sometimes the heavy weather and rain occurs in this month. Native craft put to sea again early in August. On west part of coast the weather is the same as last month.

September.—The monsoon is generally over in the beginning of this month, breezes light and swell decreasing, but at times strong W.S.W. winds and heavy swell continue up to the middle or latter part of the month. Light airs and calms prevail a great part of the month. On the western part of coast the weather continues very hot, with light variable winds, and now and then a fresh shamál. In 1872 a gale was experienced from East with rain, lasting a few hours, but this was exceptional.

October.—A fine, clear, dry month ; light sea breezes and calms ; land wind generally very light, but occasionally fresh for a few hours. Sea smooth.

November.—Same weather as last ; sometimes squally from eastward about the middle, with unsettled weather, and ground swell, probably due to bad weather away to the southward.

December.—Fine month with moderate land and sea breezes. Land breezes often strong, especially towards the end of the month, when often a moderate gale from N.E. to S.E. with rain occurs ; moderate north-westers on west part of coast at times during the month. Weather clear, unless land obscured by dust raised by the strong winds. Often very clear after rain, and weather very cold ; sea generally quite smooth the last two months. In this month and January the bad weather of the gulf sometimes reaches Jáshak or still farther east.

**The Makrán coast** has a climate intermediate between that of the Persian gulf and India, and which differs considerably in the western and eastern portions. Although beyond the limits proper of the monsoons of the Arabian sea, the effect of the S.W. monsoon in lowering the temperature is felt distinctly on the eastern part ; while on the western part, cut off by Arabia from its influence, the heat in the summer months approaches that of the Persian gulf. It is usual to speak of *the south-west monsoon* on this coast, as the heavy monsoon swell rolls on to the coast, from June to September, and damp cloudy weather prevails, with an occasional blow from the westward, and rain in the eastern districts, which is less in amount and occurs much later than farther south.

**Temperature of Persian gulf.**—TABLE showing average range of Fahrenheit's thermometer in each month on board ship, from observations extending over 4 years. On shore\* the range would be more considerable. As the observations were spread over the

Month.	Average Maximum 4 P.M.	Average Minimum 4 A.M.	Month.	Average Maximum 4 P.M.	Average Minimum 4 A.M.
January - - -	69	65	July - - -	91½	89
February - - -	67	63	August - - -	94	89
March - - -	75	69½	September - - -	90	83½
April - - -	80½	75	October - - -	85½	81
May - - -	85	81	November - - -	80½	76
June - - -	89½	85	December - - -	74	70

Lowest temperature observed 45° in February.

Highest do. do. 100° in August.

By an extract from the log of E.I.C.S. *Psyche*, on February 21st, 1825, near Kuwait, the thermometer during a shamál fell to 35°. Snow has been known to fall at Bushire.

\* At Bushire the maximum sun's rays in vacuo is 159°.

whole sea, the temperature in the northern half would be some degrees lower, and in the southern higher than this average.

The temperature varies along the Makrán coast, being much hotter in summer at the west end than near Karáchi; in the winter it is more uniform. The eastern part is cooled by the strong westerly breezes in May, and a marked decline in the temperature is perceptible after the rain has fallen. At Jáshak the effect of the monsoon, felt there as a light south-easterly or southerly breeze, is chiefly to prevent the thermometer attaining the excessive height it does in the gulf summer, although it does not amount to an actual fall.

The dampness of the climate between March and September is a marked feature, the difference between the dry and wet bulbs being very small, often nil. The following table gives the range of the thermometer (Fahrenheit's), on board ship, from observations not continuous or confined to the same place, but extending over nine years. The range on shore would of course be greater, and for Jáshak  $3^{\circ}$  to  $5^{\circ}$  may be added for the five months, June to October:—

Month.	Average.			Registered.		Month.	Average.			Registered.	
	Max.	Min.	Mean.	Max.	Min.		Max.	Min.	Mean.	Max.	Mean.
January -	73	65	69	78	56	July -	85	82	83½	88	77
February -	74	67	70½	78	64	August -	83	80	81½	87	77
March -	78	73	75½	84	68	September -	83	78	80½	86	75
April -	83	77	80	87	73	October -	83	77	80	86	73
May -	86	82	84	93	73	November -	81	74	77½	86	71
June -	88	84	86	92	78	December -	74	70	72	80	65

**Calms** are frequent in the gulfs of Persia and Omán, sometimes lasting for days. The saying of our seamen, that "there is always either too much wind or none at all in the gulf," is very true; moderate steady breezes are almost unknown.

Water spouts, or sand spouts on shore, have been frequently observed in the gulf and along the Makrán coast.

The rainfall is small and variable; at Bushire, where it has been registered, it varies from 5 inches to 29 inches in the year. On the Arabian coast it is probably less; at Maskat 3 to 8 inches are recorded. With rare exceptions it falls only in the winter months. On the coast of the southern bay of the gulf rain is said to fall very rarely.

On the Makrán coast the rainfall is uncertain; it is generally small, and sometimes hardly any falls for two or three years, but every now and then a large rainfall is gauged during the year;



generally speaking, what rain falls does so in such heavy downpours\* as often to be hardly less destructive to cultivation than the long droughts. At Karáchi and as far as Ormára, rain falls generally in July or August, sometimes also in September, but little or none falls at this season on the western part. Rain also falls in the winter months along the whole coast, generally in December or January, and sometimes in February, or, more rarely, March. This winter rainfall is more abundant on the western part of the Makrán coast than near Karáchi. The average at Karáchi, which is probably greater than on the coast, is only 6 to 8 inches. In 1869, however, 28 inches were gauged at Karáchi.

**Dew.**—The dews are very heavy, particularly in the summer months, when the sails appear in the morning as if a heavy shower had fallen.

On the Makrán coast dews are heavy from March till September, and occasionally during the cold months.

**Fogs.**—Dense fogs, wetting everything like rain, occur at times near the coast, and always in the morning. They only last a few hours.

Dense wet fogs are sometimes experienced near the Makrán shore, and are most frequent in the winter months; they occur in the morning with a land wind, and always clear off before noon.

**BAROMETER.**—In the Gulf the range of the barometer is not great, compared with more northern latitudes, although greater than in the Indian ocean.

† In winter the utmost variation is 0·6 inches, the height ranging between 29·70 and 30·30; average about 30·00. In summer there is a remarkable permanent depression of the mercury. It begins to fall about the beginning of May, and during June, July, and August stands with little variation at about 29·55, varying between 29·45 and 29·65; by the end of September it again stands at its average of about 30·00.

The diurnal variation of the barometer is somewhat peculiar; there is only one maximum, at 10 a.m., and one minimum, at 4 p.m., from which time it rises gradually till 10 the next morning; the depression

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\* After these heavy rains the rivers, or rather watercourses, of Makrán discharge an immense volume of water. The army of Alexander the Great, having encamped in the dry bed of one of these rivers, suffered great loss, and narrowly escaped destruction from this cause.

† It is probable that some correction or index error may be required to the heights here given, say one tenth to subtract, but the variations of the readings are fairly correct.

which should occur at 4 a.m. being hardly perceptible. The barometer is not a safe guide as a warning against bad weather in the Persian gulf, the worst weather sometimes occurring without any change, or the change not taking place until the gale has set in.

The Barometer is generally a safe guide for the weather on the Makrán coast, its range, although small, is greater than in the tropics, and it falls before bad weather. The gulf shamál or north-wester, and occasional squalls, often occur without barometric warning. The diurnal maximum near 10 a.m. is about  $\frac{1}{10}$ th of an inch higher than the minimum at 4 p.m., the second maximum at 10 p.m. is less marked. The table below, compiled from observations extending over nine years, gives the average height and greatest monthly range for each month. It shows a great permanent depression during the summer months\*, attaining a minimum in June; the highest reading, in December, being fully half an inch higher than in June and July. The greatest annual fluctuation observed is as follows:—

Maximum in December	-	-	30·40
Minimum in June	-	-	29·52

or 0·88 of an inch.

In consulting the barometer, the time of year therefore becomes an important consideration.

Month.	Average.		Greatest observed Range.	Month.	Average.		Greatest observed Range.
	Max.	Min.			Max.	Min.	
	inches.	inches.	inch.		inches.	inches.	inch.
January -	30·28	30·06	0·44	July -	29·81	29·61	0·34
February -	·23	·06	0·36	August -	·85	·67	0·36
March -	·17	·00	0·32	September -	·97	·79	0·43
April -	·10	29·92	0·42	October -	30·14	·98	0·37
May -	·01	·90	0·28	November -	·23	30·07	0·35
June -	29·81	·61	0·38	December -	·30	·15	0·33

**CURRENTS.**—The greater part of the currents supposed to exist in the gulf are probably tides; a vessel crossing the gulf in 6 or 18 hours would naturally attribute the error in her position to a current. Currents, which are always very weak, are probably confined to the northern end of the gulf, where the tides are less strong than near the entrance; and during a north-wester or south-easter, are replaced by a slight current setting with the wind; after the strength of the north-wester is over a slight counter current may be experienced.

\* This is also the case at Calcutta.

It is said, that on the fourth day of the shamál, a current will be found setting one knot per hour against the wind, so that a vessel will be able to make good way to windward ; but this statement requires further corroboration before asserting it as an invariable occurrence.

On the Bátina coast, particularly near Maskat, where the tide stream is imperceptible, there is generally during the summer months (when the south-west monsoon prevails outside), a set towards the N.W. not exceeding one knot per hour, except inside the islands, or in soundings where it may be nearly 2 knots. Vessels coming out of the gulf should not then attempt to work down close to this coast. During the winter months, when north-westerns prevail in the gulf, there is often a set from half to one knot per hour or even more to the south-eastward, so that a vessel would find it very difficult to beat up to Maskat, near the coast.

On the Makrán coast the currents are dependent on the prevailing wind, and are uncertain as to direction and duration, except during the S.W. monsoon. They are at all times strongest off the eastern part, and more particularly on the coast between Ras Jiyúni and Astálu island. In the S.W. monsoon a current sets past Maskat along the south coast of the gulf of Omán, curving round near Jáshak, and setting along the Makrán coast to the eastward, between Chúrna island and Ras Muwári to the southward, and past Karáchi to south-eastward, along the coast of Sind. It is variable in strength, but does not (probably) exceed  $1\frac{1}{2}$  knots per hour, and runs stronger during flood tide. It is sometimes very weak, and at times just before, or even during the S.W. monsoon, when the wind hangs to the southward, the current runs to the westward, at least as far as Ormára. During the fine season there is generally little or no current, but off the central part of the coast defined above, a set either way of 20 to 30 miles a day is not unusual. Off Ras al Hadd and to northward of that cape, H.M.S. *Ranger* found a current in August and September setting to East or E.S.E. almost constantly.

**The TIDES** in the gulf are complicated, owing to the contracted and winding entrance, and the many islands and shoals in it, and not much is known about them. The rise and fall at springs varies in different parts between 6 and 10 feet, while at neaps it is only from one to 4 feet. At neaps the rise above low water springs is from 3 to 7 feet. The semi-diurnal inequalities of height and time are very marked ; in the winter the night, and in the summer the day tide, is the superior, while the second tide in either case is quite insignificant. The rise and fall is affected by the winds, as is the general

level of the sea, to the extent of a foot or more ; the shamál lowering the general level of the gulf, and the south-easter raising it ; so that in the first case the tides will appear not to rise so high and to fall lower than usual, and the reverse in the second case.

The highest tides occur about the August springs, which may be attributed to the heaping up (during June, July, and August) of the water of the Arabian Sea on its northern coast, due to the south-west monsoon.

The tide wave takes about one hour in its passage from Maskat to the entrance of the gulf, and thence about 13 hours more to the head of the gulf. The time of high water at full and change, at Maskat is about  $9\frac{1}{4}$  hours ; at Ras Musandam at 10 hours ; at Básidu 12 hours ; at Kais island  $12\frac{1}{2}$  hours ; at Ras Náband 3 and Ras Rakkin 4 to 5 hours ; at Bushire  $7\frac{1}{2}$  hours, and at the bar of the Shatt al Arab 12 hours. Its progress in the deep water of the sea of Omán is much faster than in the shoaler water of the gulf.

The turn of the tide stream, especially at the southern end of the gulf, is by no means coincident with the time of high and low water.

In the gulf of Omán on the Bátina coast, and outside Ras Jáshak, the tide stream is almost imperceptible, though the rise and fall is 8 or 9 feet. In proportion as the sea narrows towards its junction with the Persian gulf, the stream begins to be felt, and is strong off Ras al Kuh, and in the part extending in a north and south direction beyond that cape. It increases as the breadth of the sea diminishes, attaining its greatest velocity at the sharp turn at Ras Musandam, where it runs about 4 knots, and probably more at springs, with strong eddies and races near that cape, and between it and the Saláma wa Banátaha islets, rendering a sailing vessel almost unmanageable. On the coast opposite, it is not so strong, perhaps 2 or 3 knots off Gurú.

Here the tide continues to run 3 hours each way after the turn of the tide as shown by the gauge.

The stream of flood (the ebb everywhere appears to run in about the opposite direction to the flood) then sets over towards the Persian coast and islands, and to the westward along both sides of Larak, Hormúz, and Kishm island at a rate of 2 to 3 knots an hour, also to the south-westward along the coast of Omán, but weaker, being one to 2 knots per hour.

At the Tanb islands the stream runs 3 knots at springs, nearly East and West, and for 3 hours after high water.

In its progress through the strait to the northward of Kishm island, the tide stream is so much retarded, that it does not arrive at Básidu

till one hour before high water, so that it was formerly considered to be the stream of ebb ; it being supposed that the flood tide set in at both ends of the strait, meeting somewhere at Laft, this by observations is not the case. The entrance to Básidu roads being from the west, and the in-going stream corresponding so nearly with the time of the rising tide, there is a certain convenience in continuing to call it the flood.

The tide runs also strong through the chain of islands south of Ras Bistána, but at Kaís island it is much weaker, being from one to 2 knots ; the stream still being 3 hours behind the tide.

The tidal wave reaches Ras Rakkin and Ras Mutáf at about the same time, and the stream here is much weaker ; the waterway being so much greater, and clear of obstruction, it does not probably exceed one knot an hour.

From Ras Rakkin it sets to the southward on both sides of the Bar al Katr coast at one, and  $1\frac{1}{2}$  knots per hour ; and also from the eastward through and over the reefs south of Al Bidaa, meeting the tide which sets along shore from Abu Thabi to the west, somewhere near Khor al Odaid. They are generally weak in this south bay, except locally, *see* p. 128.

The flood sets to the southward along both shores of Bahrain island, and is strongly felt through the great reefs north of it. It also sets to the southward off al Katif, where it runs about 2 knots an hour.

North of the Fasht al Yárim the stream sets East and West, about one knot an hour across the Pearl banks, often throwing a vessel out of her reckoning in making Bahrain.\* It also sets about East and West through the islands near Fársi islet.

It runs with increased strength at the corner formed by Ras Mutáf, where the water is much discoloured ; thence to Bushire, and on the Arabian coast opposite the tides are weak.

At Khárag island, tides of one to 2 knots are experienced, setting N.W. and S.E. ; and the strength increases as the rivers are approached. In the northern part of the gulf there is much less difference between the time of the turn of the stream and high or low water. At Káru and Kubbar islets, the tide sets one to  $1\frac{1}{2}$  knots N.W. and S.E. ; the flood also sets up along the Persian shore to Dílam, and thence W.S.W. to Ras Bahrkán. In the rivers the tide stream runs with considerable velocity, ordinarily 3 or 4 knots at springs, but when the snow melts on the mountains of Kurdistán, the ebb attains a velocity of 5 knots, while the flood is much weaker. The stream of ebb runs

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\* *See* page .

8 hours, and the flood only 4 or 5; and here again the stream runs on some time after the turn of tide.

The tidal wave occupies about 6 hours in its passage from the bar to Basra or Mákil.

No ship proceeding to Karáchi or the Makrán coast should be without the excellent tides tables published annually by the Indian Government for that port, especially if she has to make the place in the S.W. monsoon. They are doubtless applicable for the whole Makrán coast, allowing the following corrections for time :—

Places between Jáshak and Gwádar deduct about 60 minutes.

„ near Ormára	„	„	45	„
Summiyáni bay	„	„	15	„

The rise and fall is nearly the same as at Karáchi; near Jáshak it may be a foot greater.

The stream of tide is hardly, if at all, perceptible between Gwatar and Jáshak, at which latter place the flood sets to westward into the Persian gulf; at Gwádar it sets to eastward along the coast, following its direction, to Karáchi, and the river Indus. It is only felt near the shore. The ebb sets the reverse way, and in the S.W. monsoon is sometimes strong near shore, at other times only felt as a slackening of the prevailing westerly set.

**Waves.**—The sea in the gulf gets up quickly, and is short and hollow. At the entrance, when the tide runs strong against a heavy shamál the sea is particularly distressing, breaking very heavily; it quickly subsides after a gale. It is often out of all proportion to the amount of wind experienced, and sometimes a high swell rolls for several hours, without any wind either preceding or following. Such a swell is generally, however, the forerunner of a gale.

During a heavy shamál, there is a very high sea off Maskat. The swell of the south-west monsoon rolls round Ras al Hadd, and is felt off Maskat, and slightly, even near the entrance of the gulf.

**Swell.**—From June to September a heavy swell, caused by the S.W. monsoon then blowing in the Arabian sea, rolls in on the Makrán coast. The set of the swell, which is from W.S.W. or S.W. at Karáchi, assumes a more southerly and even south-easterly direction on the western part of the coast, being from S.S.W. at Gwádar, about South at Chahbár, and S.E. at Jáshak. The strength of the swell decreases gradually from Gwádar to Jáshak, where it is felt only as a low ground swell. The swell varies much during this time, and during a break in the monsoon is often light, and sometimes quite disappears early in September; at other times it continues heavy most part of that month, but quite ceases by the end of it; it is

much heavier than is due to the amount of wind on the coast. On the occurrence of a cyclone or storm in the Arabian sea considerable swell rolls up from southward, or a heavy ground swell and surf is observed. During a severe shamál, or north-wester, a high sea runs, which is felt even beyond Bombay.

**Pilots.**—Formerly all ships bound up the Persian gulf took in pilots at Maskat for the gulf as far as Bushire; this is now seldom done. It seems to be an unnecessary expense, particularly as the men generally offering their services are not trustworthy, their knowledge being very local.

Details of pilots for particular localities, as for the river, where they are indispensable, will be found in the description of those parts. For the river they can be taken on board from Bushire, or perhaps at Linja.

If pilots are taken on board for the Arab coast, it should be borne in mind that they are only to be depended on for the immediate neighbourhood of their own homes or for certain localities.

**Health.**—It is in the cold weather that fevers are most prevalent; the so-called gulf fever, of the remittent type, is very dangerous, and convalescence is only possible by leaving the gulf. Cholera is not of frequent occurrence, and appears not to be brought by sea but to travel down from the interior. Small-pox is also common; a small encampment at a short distance from an Arab town, is often a kind of lazaretto for this disease, and should be avoided by parties landing. Ophthalmia is common among the natives.

Plague, of a mild nature, arises on rare occasions in Mesopotamia, but has not extended as far down as Basra for 50 years. On reports of its occurrence the Gulf Ports are liable to be subjected to quarantine in Egypt or India. If no sickness has arisen during the voyage, ships pass the canal in quarantine.

Yellow fever is unknown in the Persian Gulf; late reports of it are without foundation.

The hot weather does not seem to be absolutely unhealthy; the men suffer it is true, from aggravated prickly heat, boils, &c., but provided they are kept out of the sun, and ventilation attended to, there will be probably little serious sickness. As little work should be done aloft by day as possible; awnings are a *sine quâ non*, and the men should sleep on deck (the dew does not appear to have an injurious effect). Nothing but absolute necessity can justify the exposure of the men to the sun, and white hats should be insisted on. For those who may consider these remarks extravagant, the case of H.M.S. *Liverpool*, in August, 1821, may be recorded; through unacquaintance with the danger, this ship lost 3 lieutenants and 20 to 30 men

in one day, just as she entered the gulf on her passage up to Bushire, from the *heat* only. The thermometer ranged from 103° to 106°.

**Towns.**—The small towns in the Persian gulf are all very similar, a square fort of rough stone with loop-holed towers at the angles, or several detached round towers; the Shaikh's house and perhaps one or two others of stone, the others of mats made of date leaf stalks; a date grove in the immediate vicinity, and a detached tower or two near the wells are the invariable components. They are generally built near some small creek or backwater, or other smooth place for hauling up their boats. The large towns are sometimes walled round, and have a larger proportion of stone buildings. There are nowhere any pretensions to architecture, and seldom more than two stories to the houses. The water reservoirs are often a prominent feature in the towns on the Persian coast, or in their vicinity. They are either oblong and arched over, or circular, when they have domes built over them; being white, they are often conspicuous from seaward, particularly the domed ones.

Any estimates on the population are very difficult to make with any degree of probability; the people reckon the population as so many men, and give vague guesses at the number when asked. The numbers where given in this book, are either from an estimate of the number of houses or boats, or from verbal information of the more intelligent men.

The guns mounted on Arab fortifications are, almost without exception, old, unserviceable iron European guns, originally ship guns, with old rickety carriages. When fired, about half the charge escapes at the vent. They have a curious custom of placing several guns quite unprotected outside the gate of the fort.

The navigator should not be surprised to find that any of the towns and villages described in this book have disappeared, or, on the contrary, that new towns not mentioned in it have sprung up.

New towns originate frequently through the secession of a certain number of families, who, being dissatisfied with the chief of their own tribe, emigrate and build a town of their own. Many towns and islands also, which had been abandoned during the pirate times are being gradually reoccupied.

On the other hand, if a town be abandoned, as for want of water or from the extermination of the inhabitants in war, &c., the buildings are mostly of such a perishable nature that all traces soon disappear.

**Productions and trade.**—The great heat of the summer is very favourable to the growth of the date. The dates grown on the Shatt al Arab, said to be the finest in the world, are sent to all parts



of Asia, also to Europe and to America ; quantities are also exported from the Bâtina coast. The date is the staple food of the Arabs.

Pearls are the most important export of the Persian gulf, and the fishery gives employment to the greater part of the maritime population ; nearly all the pearls are exported to India. The season of the fishery is from May to September, during which time it is pursued with the greatest assiduity by the available part of the population. During the latter month, when the date harvest also occurs, the towns and villages are nearly deserted.

From 2,000 to 2,500 boats are employed, ranging from 10 to 40, or perhaps 50 tons burden, the crews varying from 8 or 10 to 30 men. In 1887 the value of pearls exported from Linja, Maskat, and Bahrain is given as 5,800,000 rupees, or about £400,000.

The right of fishing is common to everyone, but the Arabs of different towns appear to have an understanding about their respective fishing grounds, or else motives of convenience limit them to the neighbourhood of their own towns. Thus Kuweit boats fish as far south as Jezírat Abu Ali, the Bahrain boats from thence to Arzana island, the Abu Thabi and Shárja boats to the south and east of that island.

Nearly all the towns on the Arab side, and many on the Persian, send boats to the fishery.

Abu Thabi sends a greater number than any other town, viz., 600 ; Bahrain is next with 400 ; and so on, down to small villages fitting out only 10.

The proceeds of the fishery pass into the hands of a small number of wealthy Arab merchants residing at Linja and Kais on the Persian, and Bahrain, Abu Thabi, and Shárja on the Arab coast. The divers are paid chiefly in food and clothing, small advances being made during the winter, which keeps them in a state of dependence, the pearl divers being a highly improvident race.

The fishery is pursued on any banks where the bottom is hard and level, without rugged rocks, and not at a greater depth than 12 or 13 fathoms ; the general Arab name for such a bank is Heir. It appears the longest time the diver can remain under water does not exceed one minute and a half.

A few large boats leave Bahrain and the ports of Omán to fish for pearls at Sokotra, and on the north-east coast of Africa, in the cold season, returning in time for the fishing season in the gulf. In 1860, 30 boats left the gulf for these distant fishing grounds, 12 of which belonged to Bahrain. A large trade has sprung up in mother of pearl, the oyster shells formerly valueless, are now an important export, chiefly to Europe.

A fluctuating number of horses is exported from the gulf to India (the Nejd Arab is perhaps the finest horse in the world); they were formerly packed very closely in the native vessels, and often damaged on the passage; the largest baghalas, which are only 300 or 400 tons, then carrying 80 to 100 horses. All the horses are now sent by steamer with safety and despatch.

From Persia, wool, cotton, carpets, hides, dried fruit, almonds, rosewater, &c., are exported to India, of late years in considerable quantities. An important trade in opium to China from Bander Abbas and Bushire is now carried on. In 1887 it was valued at more than £300,000 or 45 lakhs of rupees. The opium is sent by steamer to Bombay for transshipment.

Corn and a few asses are exported to the Mauritius from Maskat, also salt and salt fish. Shark fins, &c., are also sent to India for the China market. Salt and a little sulphur is also exported. A direct trade with England by steamer is making great advances. A few American ships visit Maskat, and an occasional steamer from America proceeds as far as Basra.

The imports are chiefly rice, timber, rafter poles, English piece goods, and twist, metals, indigo, coal, and sugar from India and England; coffee from the Red sea. Petroleum is also imported in increasing quantities, and various European commodities. Tea and silk are imported from China and India.

The number of square-rigged ships employed in the gulf trade, except to Maskat, has decreased of late years. Steamers, however, have increased in number, especially since the opening of the Suez canal, and conduct most of the traffic. Trade with the west coast of India is also carried on in native bottoms to some extent, but is being transferred to the steamers.

A direct trade with England from Basra is carried on by English merchants of Baghdad, by lines of steamers running through the Suez canal to Aden and thence to Maskat, Bushire, and Basra. The trade has been considerably developed since the establishment of steamers. In connection with this line there is also one to Zanzibar from Aden.

**On the Makrán coast** the trade is at present insignificant, and mostly conducted in native vessels. The native boats are called Dangi, Machwa, and Batíl; the largest are about 80 tons burden, and trade to the Persian gulf, Maskat, Karáchi, Bombay, and a few only to the Malabar coast. They are all latteen rigged.

The exports are a small quantity of dates of fine quality, wool, ghee, salt fish, and shark fins, the latter for the Chinese market; also

a large quantity of pish, a palm leaf used for making matting, and a little cotton. The sea near the coast abounds with fish of excellent quality, which forms the chief part of the food of the maritime inhabitants, and is largely salted for export; it can generally be obtained cheaply from any of the numerous fishing boats. Camels are bred in large numbers, also sheep and goats, but are not exported. Trade with the interior is very limited on account of the insecurity or non-existence of the roads; it is carried on by caravans of camels, which come to Gwádar, Sunmiyáni, and a few to Pasni and Ornára. The imports by sea are English piece goods, rice, timber, &c., and the trade is almost entirely in the hands of the Banyans, settled at the various towns, as well on the coast as in the interior.

The trade of the districts west of Gwádar is trifling, and is carried on by Maskat boats, which visit the coast for salt fish, pish, ghee, and a little wool. The trade of Gwádar is more extensive, and has much increased since the additional security afforded by the English telegraph office; it is the principal seaport and centre of trade; the only other trading ports are Pasni, Ornára, and Sunmiyáni, which are quite insignificant. The latter place has much declined of late years, owing to the rise of Karáchi, to which port its trade is practically transferred.

**Roads.**—There are no roads, as we understand the word, and wheeled vehicles are almost unknown, with the exception of gun carriages.

Communication with the interior is entirely by beasts of burden, camels, mules, and asses; the roads are merely tracks made through the country by passing caravans, often follow the beds of water-courses, and are so slight as to be hardly perceptible to a stranger; everybody varies the track as it suits his convenience. The tracks up the mountain passes are as bad and difficult as can be imagined.

**Communication.**—A weekly steamer runs with the mail between Bombay and Basra, calling at Karáchi, Bander Abbás, Linja, Bahrain, Bushire and Fao. The mail steamer between Karáchi and the Persian gulf calls also every fortnight at Gwádar, Maskat, and Jáshak, going and returning.

An English company and the Turkish Government run frequent steamers between Basra and Baghdád, and a steamer now runs on the Karún river.

**Telegraph.**—There are now sub-marine cables in the Persian gulf with stations at Fau, Bushire, and Jáshak, where messages are received for all parts of the world. Any vessel hooking the cable with her anchor or otherwise damaging it, is earnestly requested to

communicate with the telegraph department as soon as possible, giving the exact locality and all details of the accident. There is one cable between Bushire and Fau, two between Bushire and Jáshak, and thence one to Gwádar and Karáchi.

There is a land line of telegraph along the coast of Makrán, and messages for any part of the world are received at the stations, viz., Ormára, Gwádar, Chahbár, and Jáshak. A blue light would be answered, and a light shown at any of the telegraph stations if the vessel were expected, or if her signals were observed at Bushire, Jáshak or Gwádar, which offices are open all night.

**Native craft.**—A considerable part of the trade between the gulf and India, the Red sea and the east coast of Africa, is carried on in native vessels called baghalas. They are from 100 to 300 or even 400 tons, and are clumsily rigged with a huge main-mast and latteen sail, and a small latteen mizen;\* they cannot tack, and require a large crew. They do not go to sea in the south-west monsoon. Though clumsy in appearance above water, with a high poop like an old fashioned ship† they have fine bottoms and sail well, especially in moderate winds.

The smaller vessels used in the pearl fishery and for the coasting trade, are called batíls, and bakáras; they vary from 10 to 120 tons and are rigged similarly to the baghalas. They are beautiful models and sail very fast.

The real dhow of the pirate times—which was a modification of the baghala, is now never met with. It had an overhanging stern.

**Piracy.**—For the information of strangers, it may be stated that a piracy on a European vessel has been unknown for years.‡ No molestation need be anywhere apprehended by the smallest trader within the gulfs of Persia or Omán, even if wrecked; except, in this case, such petty acts of pilfering as might occur anywhere. To the southward of Ras al Hadd a vessel grounding would certainly be plundered by the Bedawín, who are the sole inhabitants, and under no human control. During the last few years the Beni Hajir of al Katr have committed some petty piracies on native boats.

\* Probably the largest baghala in the gulf in 1860 was the *Duniyah* (*World*) of Bahrain. Her main-mast was a single spar, 104 feet in length by 8 in circumference, and her main-yard, 140 feet in length.

† The height from the taffrail to the water is, in a large one, as much as 27 feet, when light.

‡ A piratical attack made on an English mail steamer at Basra in 1872, seems to contradict this. They were, however, a local gang of land robbers without boats of their own, and were not seafaring men. Such attempts should be guarded against by not allowing boats alongside at night.

**Salutes.**—All the Arab chiefs attach a great deal of importance to a salute from a ship of war. The usual number is 3 guns, and 5 to some of the most important. The Sultan of Maskat is saluted with 21 guns.

The salute will always be returned at once.

**Obtaining information.**—It is most difficult to get information from the Arabs of a trustworthy nature. They are perhaps the least thinking people in the world; they know very little, and care to know but little. Generally an Arab will not admit that he does not know, he will pretend to know a great deal, and give you as much erroneous information as occurs to him during the time he is talking to you, and when he does not know the name of a place he is never at a loss to invent one. This habit must not mislead the stranger.

**Presents.**—A vessel anchoring off an Arab town is always besieged for medical aid; strong aperients, opium, and mercury, eye medicines, caustic for sores, and lint seem in most request.

If small presents are to be made for any service rendered, the following articles are preferred:—Fire arms (*flint lock*), fine grain powder, lead, cutlery, small telescopes, cloth (red and drab, favourite colours), looking glasses, coloured silk handkerchiefs, gun flints, watches, if by McCabe, are much valued.

**Buoys and Lighthouses.**—In the gulf, at the entrance to the river, and also at Bahrain, some buoys have been placed by the Mail Steamer Company. At Bushire none are now maintained. Even a beacon or artificial land-mark of any kind is rare, and quite insignificant. There are no lighthouses.

There are no docks, or any accommodation for repairing vessels. A small mud dock, for river steamers only, is found at Makil, the property of Messrs. Lynch, where there is also some repairing plant for such vessels.

#### PASSAGES TO AND FROM THE PERSIAN GULF AND MAKRÁN COAST.

**Full-powered Steam Vessels.\***—Special directions appear to be scarcely necessary for passages between India, Aden, or the east coast of Africa and the Persian Gulf. During the south-west monsoon, June to September, a steamer leaving Bombay for the Gulf, after making an offing, should keep to the northward of the direct course to Maskat until in latitude 24° North. From Karáchi she should keep along the Makrán coast until past Chahbár. A vessel proceeding to Aden would keep close along the coast of Arabia; the

\* See also Admiralty Charts, No. 1077, Tracks followed by full-powered steam vessels and by auxiliary steam vessels, No. 1078.

monsoon would be strongest between Ras Madraka and Khoriya Morya. After passing cape Fartak it is much less violent. A steamer from the east coast of Africa would do well to pass Sokotra island eastward of longitude  $56^{\circ}$  E., in order to avoid the counter-current and confused sea found to westward of that meridian.

NAVIGATION OF THE MAKRÁN COAST.—STEAM VESSELS.

**Karáchi to the Westward.**—On clearing the breakwater off Manora point, the course is West for 18 miles, when cape Monze will bear North, distant about 2 miles, remembering not to bring Manora lighthouse to bear to southward of East while in sight. A course W.  $\frac{1}{4}$  N. for 237 miles then leads direct into Gwádar east bay, passing about 2 miles outside Webb bank. Chúrna island is visible more than 30 miles in clear weather, and is lost sight of rather sooner than the high land over cape Monze. Before it is quite out of sight the Malán cliff will be seen, Jebel Hingláj, and the high land near it, having been then in sight some time. Ormára head cannot be mistaken, a high promontory making like an island, which may be safely approached if working along the coast.

Astálu island, a little table-land, will be next seen, and Webb bank must be avoided in the south-west monsoon, and at all times in a heavy draught vessel. After passing the island, the curious little barn-shaped hill Jebel Zarrain will be seen. When off Ras Shamál bander, which is the east end of a long range of white cliffs, the Darám and Mahdi hills will be seen, and on a nearer approach Gwádar head makes like an island. The tree on Ras Nuh is not seen on this bearing if shut in against the higher town bluff. In the night, by keeping in 12 to 15 fathoms after passing Webb bank, Gwádar head could not be passed without being seen.

If the vessel does not call at Gwádar, a course West, a little northerly, may be shaped for Ras Jiyúni, passing 7 to 8 miles outside Webb bank and Ras Nuh.

On leaving Gwádar, and being clear of the spit south of Ras Nuh, the course is W.  $\frac{3}{4}$  S. for 38 miles to a position 2 miles south of Ras Jiyúni. Ras Garnán, the low point to eastward of Ras Jiyúni, is the most southern part of the coast, and should have a berth of not less than a mile, on account of the overfalls off it; the water will here shoal to 9 fathoms on the Gwatar flat. The hills between Pishkán and this point are of a remarkable and fantastic shape.

From Ras Jiyúni a course of W.  $\frac{1}{2}$  N. for 150 miles will lead to a position abreast of Ras Maidáni and a mile clear of the shoal flat off it. Crossing Gwatar bay, this course leads 2 miles outside Ras Fasta, distant 17 miles, and known by the "castle" hill, the islet not being

conspicuous until bearing about N.E.; at 15 miles further west is Ras Barís, the west bluff of a long table-land with very remarkable hills behind. Kháki kuh cannot be mistaken, and will be seen over Ras Barís. Chahbár will be passed at a distance of 9 miles; it is 30 miles beyond Barís; only the rounded hill of darker colour over the place will be seen.

The peninsula on the west side of Chahbár bay, of low irregular cliffs, and Gúrdim, a table-topped peninsula, are next passed, and between these and 21 miles from Chahbár lies Báklang rock, which is  $2\frac{1}{2}$  miles from Gúrdim point, and must be avoided; a W.  $\frac{1}{2}$  N. course will lead 7 miles outside the rock (*see* page 193). At 19 miles beyond the rock, Ras Tank will be passed 7 miles off, and will hardly be visible; the little dark hills to eastward of it are conspicuous, and should not be mistaken for it. Before reaching Gúrdim the remarkable range of Kuh Kalát comes in sight, and is conspicuous until past Maidáni. The low cliff of Maidáni, it must be remembered, only occupies the eastern part of the point, and the flat off the west side must not be approached too nearly (*see* page 195).

Before reaching Maidáni, the great peak of Sháhu will have been sighted; it continues conspicuous until off Jáshak, where it is shut in behind the nearer hills. From Tank the distance is 48 miles to a position off the western point of Maidáni, and from this a course W. by N. 52 miles would place a ship abreast of the very low point Ras Jagín, and 2 miles off it. Continuing the same course a distance of 19 miles brings her opposite Jáshak point, distant over 3 miles, known by the large telegraph buildings near the low point. If bound to Jáshak, the course would be altered after passing Jagín.

The course W. by N. leads also 2 miles clear of Mason shoal, which a vessel drawing more than 15 feet must avoid, and 3 miles outside the Gahha; after passing the latter she may haul up and pass Ras al Kuh, a very low point, within a mile by day, but it is not easily made out at night.

After passing Jagín, Kuh Ushadán and the hills off Jáshak will be easily recognisable; Ras Jagín itself is not visible by day more than 3 or 4 miles. Kuh i Mubárák will not be sighted until past cape Jáshak.

#### VESSELS WITH SAIL AND AUXILIARY STEAM POWER.

**South-west Monsoon.**—The passages from the Gulf to India are easy; it is well to be on the parallel of Kenery island before making the land, so as to avoid making the land north of that port, especially if no observations have been obtained the last day or two.

From the Gulf to Aden a vessel should stand from Ras al Hadd as high as she will lie on the starboard tack, passing far to windward of the Lakadivhs, until in latitude  $7^{\circ}$  to  $9^{\circ}$  N., where she would get more moderate weather and could make westing under fore and aft sail on the port tack, keeping well to windward to allow for the prevailing lee current. She should round Guardafui as closely as possible.

**North-east Monsoon.**—Passages either way between the Gulf and India require no special remark. From places south of the line an auxiliary steamer bound to the Gulf should cross the equator in about longitude  $70^{\circ}$  and make a north course until in the latitude of the Lakadivhs, when she could keep more to north-westward to make the high land below Maskat.

From Aden to Maskat such a vessel would do best to stand close along the Arabian coast as long as the weather continued moderate and might thus make her passage, but if the wind and sea were too heavy she should stand off to E.S.E. under steam and sail until near longitude  $67^{\circ}$ , when she should be able to fetch Ras al Hadd.

#### SAILING VESSELS.

**Bombay to the Gulf.**—In September and October, which are the months of light variable winds between the monsoons, the passage is tedious; light north-westerly winds are general. There will be no advantage in keeping near the Indian coast to the north of Bombay. In September the remains of the monsoon swell will be still felt.

If bound to Maskat a course as nearly direct as possible should be made to that place, but if bound to the gulf direct, a ship should not make the Arabian coast, but keep more to the northward towards the Makrán side of the gulf of Omán.

In November, December, January, and February the passage is facilitated by the north-east monsoon. A ship should keep to the north-westward, not far from the Katiwar coast, till in latitude  $23^{\circ}$  or  $23\frac{1}{2}^{\circ}$ , and then stand across to the westward. In the north-east monsoon the weather is generally fine and clear, and breezes from moderate to strong (4 to 6); but with the gulf of Kutch open, north-east squalls with heavy rain sometimes occur; strong S.W. or S.E. winds have been experienced at the same time, of short duration.

In November, May, or June a cyclone may be experienced in the Arabian sea, south of latitude  $24^{\circ}$ , but they do not appear to reach as far as the Makrán coast.



The track of these storms is either along the coast of India to northward and north-westward, or more westerly towards the Arabian coast.

The north-east wind may possibly be carried quite to Maskat or Ras al Kuh, if a nashi (page 11) is blowing in the gulf of Omán ; more probably, the north-east wind will be lost about longitude  $62^{\circ}$  or  $63^{\circ}$ , and after a small zone of variable winds, a north-wester or light north-westerly winds in the gulf of Omán will follow.

As a vessel would probably either have light airs with a lee current (S.E. perhaps 30 miles a day), or a strong north-wester (either of which would render her passage up the coast very tedious), she should not attempt to close the Arabian coast till Maskat bears to the southward of S.W.

In March and April, when north-westers prevail on the coast of India, and the land wind is light and uncertain, little is to be gained by keeping in with the land. A ship should make a direct course across, taking advantage of every shift of wind to make nothing.

In May, or early in June, on the contrary, on leaving Bombay, every slant of wind should be profited by to make westing, so as at any rate to be able to make the passage, when the strong S.W. or W.S.W. winds set in at the beginning of the monsoon. Heavy gales from the S.W. in anticipation of the monsoon are sometimes experienced in these months. The south-west monsoon will set in, early in June generally, with thick weather, heavy squalls and rain ; it sets in somewhat sooner on the south-east coast of Arabia than in Bombay.

Very bad squalls from West and N.W. and unsettled weather are experienced sometimes in May on the coast of India ; after which there is a period of light winds and unsettled weather with frequent S.W. sea breezes in the afternoon, lasting for 3 days at a time, until the setting in of the south-west monsoon in the first half of June.

In May, or early in June, also in October or November, cyclones are sometimes experienced in the Arabian sea. All ships leaving Bombay in May, though it may be fine when they start, should be prepared for meeting the first burst of the monsoon before reaching the Persian gulf.

Leaving Bombay for the gulf in June (after the south-west monsoon has set in), July, and August, it is the practice to make what is called the southern passage ; *i.e.*, running down to the south-east trade on the south of the line, to make the westing.

No case is recorded of a sailing vessel beating straight across, which left Bombay, between the 15th of June and the end of July. It has

been repeatedly done by ships leaving early in June or in the beginning of August. A fast sailing ship would probably be able to make the direct passage at any time. Very heavy weather and hard squalls would be experienced with a very high sea, and she would take advantage of any change in the direction of the winds to make westing.

Some years the monsoon is much heavier than others, and there are often breaks of moderate weather of uncertain duration. Probably a vessel would do best between  $21^{\circ}$  and  $24^{\circ}$  N. latitude; farther southward the weather would be heavier, while on the other hand it would not be advisable to get too near the Makrán coast, where there would be a heavy swell and lee current; the monsoon does not always blow home, and in the event of light winds there would be difficulty in beating against the swell and current.

**The Southern Passage**, a distance of about 4,000 miles (while the direct distance is only 840 miles), averages from 35 to 45 days from Bombay to Maskat. The soundings will be a sufficient guide for the distance off shore, after working out of Bombay harbour. When in 15 fathoms or upwards, a vessel may stand down the coast; it is proper to keep in soundings of not less than 30 fathoms, which is quite near enough to the coast, and yet not to deepen off the bank of soundings altogether; 40 to 50 fathoms would be a suitable line of depth. The reason is, that if no observations are obtainable, by keeping on the bank of soundings, there can be no danger of running on the easternmost of the Lakadivh group; but after reaching lat.  $10^{\circ}$  N. it is best to make as little easting as possible, as the south-east trade is found nearer the line by the Maldivhs, than in the meridian of Ceylon.

The weather will be overcast and thick, so that possibly no observations will be obtained for 2 or 3 days, with heavy showers and hard squalls at West and W.N.W.; the wind being from S.W. to W.S.W. It will be more from the northward in August than in the former two months. A current will generally be experienced setting to the S.S.E., especially in July and August, of 20 to 30 miles a day.

In  $5^{\circ}$  N. the weather will begin to be finer and more moderate. The equator should be crossed in from  $77^{\circ}$  to  $79^{\circ}$  E. longitude, with light winds, cloudy weather, and possibly rain, with occasional calms; the wind varying from West to S.S.W., and sometimes an easterly current. This weather will continue till in latitude  $5^{\circ}$  or  $6^{\circ}$  South; or till the south-east trade is fallen in with. In July or August probably no trade wind will be experienced before reaching latitude  $8^{\circ}$  or even  $9^{\circ}$  South.

In June, according to Horsburgh, the south-east trade would be fallen in with in  $5^{\circ}$  South, in which case the westing might be run down in that latitude; but it appears that, in general, vessels are obliged to pass to the southward of the Chagos archipelago, which appears the preferable route at all times.

Diego Garcia is sometimes sighted, but, the cocoa-nut palms being only visible about 15 miles, it is often passed without being seen.

On getting the trade, a course should be shaped for the Seychelle islands, about W. by N. The breeze will be steady and strong, with fine weather, and westerly current.

Horsburgh recommends running one or two degrees to the westward of the meridian of Ras al Hadd, before steering to the northward, but probably much time would not be lost by sighting one of the Seychelle islands for a fresh departure. This would be 2 degrees further west, but then the south-west monsoon would be a little more free, which might compensate for the extra distance. This is, however, only a suggestion.

The line should be recrossed in longitude  $56^{\circ}$  or  $57^{\circ}$  East; the trade will be carried as far as the line, veering gradually to South and S.W. The weather will be moderate till in about latitude  $4^{\circ}$  North, when the south-west monsoon will increase in strength, reaching its maximum force in  $10^{\circ}$  to  $12^{\circ}$  North, when it will be a moderate to a fresh gale (7 to 8) with gusts, and a very heavy sea, weather hazy.

On the parallel of Sokotra probably the meridian of  $58^{\circ}$  will be the best distance off it, as the weather and sea are always worse nearer that island; also between  $54^{\circ}$  and  $56^{\circ}$ , a S.W. counter current of 30 miles a day will be experienced; while, on the other hand, it is not advisable to be too far to leeward in case of the monsoon hanging to the westward; the heavy sea and easterly current must also be considered.

From the equator an increasing north-east to easterly current will be experienced; off Sokotra, probably easterly 30 or 40 miles a day.

The weather will be moderate and more hazy as the latitude of Ras al Hadd is approached, the land below which should not be made. As soon as Ras al Hadd bears South the monsoon is lost, and light variable winds with probably a north-westerly current, or a moderate south-easterly breeze succeed it, with a swell following round the cape.

Immediately on rounding the cape the sudden change from the comparatively cool weather of the monsoon to the damp stifling heat of the Persian gulf will be severely felt.

**The GULF to BOMBAY.**—The winds are favourable throughout the year when clear of Ras al Hadd. In the north-east monsoon or fine season (from October to April or May), the wind is mostly favourable for getting out of the gulf of Omán; the current, if any, setting to the south-eastward, and N.W. or N.E. winds prevail.

In the south-west monsoon, when light south-easterly winds or calms are common, with a heavy swell rolling up from South or S.S.E., round Ras al Hadd, and the current on the Arabian coast setting to the N.W., it is somewhat tedious to get clear of the gulf of Omán.

The monsoon will be first experienced in longitude 60° East, blowing at first from South or even S.S.E., and veering to S.W. and W.S.W. as the longitude is increased. A course should be shaped so as to be on the parallel of Kenery island, when in about 40 fathoms; that island having a light of the first order on it, and being the point easiest to make in thick weather. It is also to windward of the entrance to the harbour of Bombay.

The vessel will have steady monsoon weather with a heavy sea, and perhaps squalls, till on the edge of the bank of soundings, where the sea is said to be always worse, and rain squalls with thick weather, will be the rule. A current of 12 to 15 miles a day will be experienced, setting to East and S.E. Probably no observations will be obtained the last two days of the passage.

In the fine season the best passage is made by keeping to the northward of the straight course, so as to pass near the Katiwar coast, where the north-easterly wind is stronger, or after March, north-westerners will be experienced.

**INDIA to the GULF.**—In the south-west monsoon, a vessel leaving any part of India south of Bombay, would have to make the southern passage. In the north-east monsoon the best course would be to work up the Malabar coast with the land and sea breezes, and proceed as when leaving Bombay.

In March, April, or May, when the land winds on the Malabar coast are weak, it would be better to make as direct a passage across as possible, as working up the coast would then be no advantage, in fact, the reverse, as the north-westerners set in about the middle of March, and strong west and W.S.W. breezes blow on to the Sind and Kutch coasts, even in the latter part of February.

**CAPE of GOOD HOPE to the GULF.**—In the south-west monsoon the passage would not be different from the latter part of the southern passage to the gulf from India (before described, page 35) after passing the line. The passage from the cape to the

line would be the same as the ordinary track of vessels to Bombay at that season.

In the north-east monsoon, the passage would be best made by going round by the Malabar coast and Bombay, thence as detailed for the passage from Bombay in that season. It would be much more tedious, if not impossible, to work up the Arabian sea, between Sokotra and the Maldivh islands, against the strength of the north-east monsoon and lee current.

**RED SEA to the GULF.**—In the south-west monsoon, after clearing the gulf of Aden, and getting the monsoon in longitude  $51^{\circ}$  East, a vessel would have no difficulty in running up the Arabian coast. She should not be too close in, as the weather is hazy; and very near the land the wind sometimes falls light. The current sets to the N.E. along the coast.

In the north-east monsoon the passage is tedious, with a lee current. Vessels have worked up the coast against it to Ras al Hadd. It would take about six weeks. During these months sudden gales from North to N.W., called *belád*, are experienced near the coast, only between cape Fartak and Masíra island;\* otherwise the weather would be fine, the wind N.E. near the coast, and more easterly at a distance from it.

In Khoriya Morya bay strong S.W. gales have been experienced in February and March, lasting six days.

**Challenger bank** is reported to be in lat.  $22^{\circ} 29'$  N., and 40 miles from Ras al Hadd, with 13 fathoms water on it. See page 50.

**Bombay to the Makrán coast.**—Passages are easy during the north-east monsoon, but are often tedious in October from calms, and in March and April from head winds.

The supposed indraught into the gulf of Kutch is probably due to the fact that if the flood tide be running at the time a vessel is crossing the mouth and near the entrance, she will be set inside her course, owing to the tide acting on the bow. Fortunately the soundings are a good guide. In May the passage along the Makrán coast would probably be very tedious, owing to calms, or strong westerly breezes with a slight lee set.

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\* The *belád* blows when the sky is a beautiful pale blue, sometimes light streaky white clouds in an arched form hang over the land, and the outline of the hills is sharp and well defined. The atmosphere becomes exceedingly dry, and clouds of sand are driven off by this wind. It blows in very violent and sudden gusts, and changes about from N.W. to N.E. It lasts three, seven, or even ten days, and is dangerous to vessels near the shore, for when calm at night the gusts will come down (at short intervals), without any warning, except the noise on the water.

During the fine season, or, from September to April inclusive, a vessel may stand or work along the coast with the land and sea breezes, or anchor in one of the bays if a strong contrary wind be experienced. The wind for the passage along the coast towards India is generally fair all the year, except in December and January, when a vessel would be probably delayed by the north-easters, until off Karáchi, whence they are a fair wind.

In the south-west monsoon, as soon as clear of the land, a sailing vessel leaving the coast can always fetch Bombay or go out to sea to the southward, and a well found vessel ought always to be able to work up from Bombay to Karáchi during the monsoon, or from Karáchi to the gulf, although she would have a heavy swell and lee set. A good offing should be made off Bombay at this season before standing to the northward. After passing Diu head the weather may be expected to be more moderate, and the course is more northerly; the Katiwar coast should not be approached under the depth of 30 fathoms. In case of necessity it is always practicable to bear up for Bombay. As the south-west monsoon appears to be more violent at Bombay after full and change, it may be better to start after the quartering of the moon, if circumstances admit of waiting.

If attempting to work along the coast of Makrán, in this season, it is recommended to work between  $21^{\circ}$  and  $24^{\circ}$  N. latitude, and take every advantage of the wind veering to westward at night. Nearer the coast, the wind is often light with a heavy swell, and the lee current is probably stronger. A vessel should avoid standing into Sunmiyáni bay; if compelled to do so she might anchor under the lee of Chúrna island, which, however, is too small to give much shelter.

There is no reason why a vessel should not visit Ormára and Gwádar, or any places west of it during the south-west monsoon, but there is much ground swell in all the anchorages on the coast. The haziness of the weather and lee current render care and attention to the navigation when approaching the coast in this season very necessary.

Native vessels do not go to sea from the end of May to the beginning of August, after which date they consider the bad weather over.

If bound to the southward from the Makrán coast, in April, May, October, November, or early in June, with gloomy weather, falling barometer, and southerly swell, it is well to bear in mind that probably a cyclone is blowing to the southward, and to take due

precautions as to approach to it. The course these storms travel varies from about N.N.W. to W.N.W. or more westerly ; they do not appear to occur every year, but are more frequent than was supposed formerly.

Off the gulf of Kutch bad weather is sometimes experienced from S.W. to S.E. and N.E. in December to February during the north-east monsoon, not lasting more than a day

#### NAVIGATION OF THE PERSIAN GULF.

**Steam Vessels.**—No special and separate directions for steam vessels appear to be required, as they would shape direct courses from point to point, being also guided by the descriptions given chiefly for sailing vessels in the next section.

#### SAILING VESSELS.

**General Observations.**—It may be laid down as a general rule that the passage up the gulf is more tedious than that down the gulf.

A vessel merely passing up and down the gulf should keep entirely on the Persian coast ; as at the entrance the tides are very strong on the Arabian side, and the rest of the Arabian coast is fronted by extensive reefs, and is very low.

Care is required in the navigation, owing to the numerous islands and strong tides near the entrance, and to the frequency of strong breezes and bad weather (especially in winter), which set in without much, if any, warning ; as also the liability to sudden shifts of wind.

During shamáls, especially in summer, and during the nashi of the southern part of the gulf in winter (page 8), the very hazy state of the atmosphere renders it impossible to see the land unless quite near ; a stranger would never imagine the haze to be so thick as it really is, and he might find himself quite close to the beach before seeing it.

**Passages up the Persian Gulf.**—Vessels bound up the gulf generally have occasion to call at Maskat, the following directions will serve whether they do so or not.

In the fine season the high land of the Arabian coast will generally be seen at great distances, especially at sunset. The mass of high land between Ras Abu Dáud and Sur is that always made, an extent of 60 miles along the coast. The mountain Jebel Abu Dáud will be the nearest, while over it are the higher mountains of Karyát (Jebel az Zátari), having the great valley named by navigators the

"Devil's gap" between them, and the mountains called Jebel Beni Jábir. Jebel Abu Dáud should bear South to S.S.W. according to the distance off. As nothing will be gained by closing the Arabian coast until Maskat bears S.W. at least; a ship working up from the southward should keep at a distance of about 50 or 60 miles from the coast. This is desirable to avoid the light airs and south-easterly current experienced near the shore.

A remarkable saddle hill (1,340 feet), the highest of the black hills near Maskat, and 2 miles southward of that town, is a good mark for its position; it is very conspicuous when bearing W.N.W. to W.S.W. On a nearer approach, Fahal islet, 280 feet high, will be seen about 6 miles to the north-west of the town, and Jaláli fort at Maskat, is sometimes seen when bearing about West, showing white in the morning sun against the black hills behind.

There is anchorage only in deep water and quite close to the shore from Maskat to Sur.

In the south-west monsoon, a vessel would pass as close as convenient round Ras al Hadd, which is a low sandy point and deep-to; it is not probable, owing to the hazy state of the air, that the high land would be seen till off Sur or Kalhát, and if not pretty close in, it might not be seen at all. The high land often becomes visible for a short time about sunset.

There is no difficulty in getting up to Maskat at this season, but if the cove were passed in the night, or through not being close enough in, it might be tedious getting back to it again.

There is no danger whatever for a ship between Ras al Hadd and Maskat, unless within a mile of the shore.

**Maskat to the entrance of the Gulf.**—Leaving Maskat for the gulf with a fair wind, a course N.N.W.  $\frac{3}{4}$  W. for 146 miles will carry a vessel abreast of Ras al Kuh, and about 8 miles off it, and thence 60 miles farther on the same course to a position abreast of the Great Quoin (Saláma) 540 feet high, and 5 miles distant from it. With a north-wester it would be better to stand well over towards the Persian shore and work up along it, in preference to the Arabian side, where there would be a lee current and heavier swell. Besides, some of the islands of the Daimáníyat group are very low, of even form and brown colour, and it would be better to avoid making them in bad weather, especially by night. They are deep-to on their north side, so that the soundings would be little guide. In fine clear weather the mountains on both the Arab and Persian coasts (Jebel Nakhl and Jebel Shahú) may be seen at the same time when in the middle of the gulf.



**The Persian coast** is deep-to and safe to approach to the eastward of Ras Jáshak, but the shore is very low, the hills being a considerable distance inland. It would not be desirable to approach it too closely by night. The 100-fathoms line is only 5 to 8 miles off Ras Jagín and Maidáni.

The Quoin hill, inland of Jáshak, is a capital landmark and conspicuous except from E.S.E.

The shore is very low on the whole of the Persian coast as far as Hormúz, excepting one or two small hills near the beach. It is deep-to, and deceptive as to the distance off, as the low shore is not visible farther than 4 or 5 miles, at which time the appearance of the hills would lead one to imagine the vessel to be twice that distance from land. The lead is little guide unless kept going very quickly. Care must be taken in passing the shoal east of Ras al Kuh, and the flat off Ras ash Shir, or in standing in towards them in beating up. The land-mark Kuh i Mubárah is conspicuous when seen from N.W. or S.E., but less so from abreast of it, when it is not so plainly visible against the light coloured hills behind ; it is of light colour, and only visible 18 miles.

Jebel Karya and Bis are remarkable, and visible quite across the strait from near Lima.

**Arabian coast.**—In clear weather the great mountains of the Ruús al Jebál will be seen abreast of Ras Jáshak ; they form in two principal peaks.

It is not advisable to stand over too close to the Arab coast in working to the northward from Ras al Kuh, though there are no dangers off it, as the wind is generally lost, or becomes baffling under the mountains ; the tides are very strong, especially north of Umm al Faiyarín, and the water too deep for anchoring.

Umm al Faiyarín generally shows of a light colour against the mountains behind, and though a lofty islet, quite insignificant by comparison. The remarkable group commonly called the Quoins cannot be mistaken : the Great Quoin is visible 27 miles ; sailing vessels should not pass very close to, or to the southward of them, unless with a strong fair wind ; and even then the breeze is seldom carried past these islands. The tide sets about N.W. and S.E. near them, and is very strong, with eddies and races to southward of them.

**Entrance of Gulf to Tanb Island.**—From Ras al Kuh round to Hanjám island the tides are strong quite across the sea, and have a material effect on the vessel's progress in short intervals of time. The two mountains Shimíl and Ginao are seen in very

clear weather from near Umm al Faiyarín. On rounding the Quoins, Lárak will be seen, making at first in many detached lumps; and if a working breeze, a good stretch over close to it should be made, it being safe to approach.

In light winds, vessels working in have been carried by the flood to the north-eastward of Lárak, and it being dark, did not find it out till they tacked, and made Lárak on the starboard tack, close-to. It is high water at full and change at Musandam about 10 hours, but the stream of flood would run 3 hours longer, and the stream of ebb as much after low water; from which data the direction of the stream, whether flood or ebb, may be roughly estimated.

Hormúz, with its several white peaks, will be seen on the starboard bow as you stand towards Lárak. The shamál blows here W.S.W. to S.W., and a vessel should not get too far over to the coast south and east of Hormúz, which is a lee shore for that wind without any shelter. Hormúz or Kishm roads are good places of shelter, if caught in the strait in a heavy shamál. The water near Lárak is too deep for convenient anchorage.

**Quoins to Tanb.**—When the Great Quoin bears South 5 miles distant a course W. by S. for 67 miles will bring a vessel abreast of Tanb island, nearer the edge of Básidu flat than to the island.

The hills on Kishm island (Jezírat at Tawíla) are characterized by light colour and remarkable table-topped and precipitous forms. Hanjám is covered with irregular dark coloured hills, and when seen from the east or west, has a remarkable gap or valley near the north end. As the chart shows, between the Quoins and Tanb, the sea, with the exception of Coote bank, which has 27 feet water on it, is clear for working quite across the gulf. Hanjám sound affords good shelter against all winds. In approaching or standing over towards the flat off the S.W. end of Kishm island, the lead must be kept going. The discoloured water will indicate its edge by day very clearly, although a vessel may stand some distance into the discoloration before shoaling her water. A look out should be kept for fishing boats at anchor on the edge of the flat. Jezírat Tanb (seen about 15 miles by day) is level, brown coloured, and does not show well at night or in hazy weather; it is deep-to, except on the south side, and has foul ground half a mile off the S.W. corner. From this island a departure is taken for entering Básidu road or for Linja.

**Coote bank.**—This shoal ground, least water  $4\frac{1}{2}$  fathoms, was first reported in 1844 by the East India Company's *Coote* (see also page 233).

The tides make a strong ripple over the shoal, and run at the rate of 2 to 3 knots at springs.

**Tanb to Kais.**—When Tanb bears South about 5 miles distant, a course West 43 miles, and then W.  $\frac{1}{2}$  N. 30 miles, carries a vessel abreast of Kais island. After passing Tanb, the island of Nábiyu Tanb (or little Tanb) will be seen; it makes in two lumps (dark little peaks at north end), is deep-to and safe to approach. On the starboard bow Jebel Bistána will be seen making like a high island.

The course given above takes a vessel  $1\frac{1}{2}$  miles north of Farúr island, and  $5\frac{1}{2}$  miles from the shoal named after it. The island, 465 feet high, is a mass of dark volcanic peaks, and visible 25 miles; it is deep-to all round, and may be passed quite close. By keeping in 25 to 30 fathoms, a vessel will be clear of the shoal at night, and also of the island, if not seen. The depth increases to 40 and 44 fathoms towards Farúr, and decreases towards the shoal. The island shows well at night, unless the weather is very hazy.

The Yarid hills, an isolated mass, will be seen to the left of Bistána, when bearing N.W. by W.; and before reaching Farúr, the grand land-mark, Jebel Turanja, a round-topped mountain, will be seen to the left of these hills, when you will be clear to the westward of Farúr shoal. This mountain is visible about 70 miles. Kais island may be seen about 13 miles, is of an even form and similar in appearance to Tanb, though much larger, and has a few trees on it. Its east and west points are low, and the island is difficult to see by night or during haze. Deep water is carried near the outer side, which should not be approached nearer than a mile.

In working from Tanb to Kais, it is as well in light winds to keep to the northward of the Tanb islands, so that if the wind falls light and the tide be unfavourable, a vessel may be able to anchor. The lead is a safe guide approaching the flat, not so towards the islands. If standing between these islands, remember the tide sets East and West, 2 to 3 miles at springs.

The Arabian coast is not visible at a greater distance than 6 or 8 miles—so that it is seldom made by vessels working up; it is quite free from danger as far as Ras Hasa.

It would be advisable to be in with the Persian coast by daybreak, as if there is no land wind the north-wester always draws a few points off that coast about that time.

On the island of Abu Músa a dark sugar loaf hill may be seen about 20 miles; the rest of the island is low with a few detached small dark hills. The Shaikh of Shárja uses the island as a cattle station, and has had wells dug, date trees planted, &c. There is foul

ground extending half to a quarter of a mile from the beach. There is no objection to making a stretch to the southward of this island, if convenient; the lead is no guide approaching it. Sirri is low and has many hillocks on it, is not visible more than 12 miles, and has foul ground round it, except on the east side, to a distance of a quarter to half a mile; the lead is no guide.

Nábiyu Farúr has a small dark saddle hill on the east side, and a reef one mile off the north-west corner; lead no guide, visible about 14 miles.

If becalmed east or west of any of these islands, attention should be paid to the drift. If a strong north-wester sets in, a vessel may find shelter close inshore anywhere east of Bistána, or in Mughú or Cháarak bays, or in the bay on the east side of Kais.

In north-westers, less sea will be found by working up near the Persian coast. A ship may stand quite close in at this part, except under Jebel Yarid, which has shoal water from one to  $1\frac{1}{2}$  miles off it.

**Kais to the Mutáf\* bank.**—When the island of Kais bears North about 7 miles, a course N.W. by W.  $\frac{1}{2}$  W. 45 miles, brings a vessel abreast of Shaikh Shuaib, and about 5 miles from it; and thence N.W. by W.  $\frac{1}{4}$  W. 120 miles, will take her past Ras al Mutáf (in 13 to 15 fathoms) opposite Mukhaila islet, and 11 miles off it.

Hindarábi is an island similar to Kais, and visible 13 miles; it has deep water close to the reef on the south side, which should not be approached nearer than  $1\frac{1}{2}$  miles.

Shaikh Shuaib is another island similar in appearance to the last two, but much larger; a large round tree on the highest part near the centre is conspicuous, and has been taken for a sail. It is quite deep-to and safe to approach.

The great landmarks called by seamen Aslú notch and the Barn hill will be successively seen; they are each visible about 70 miles, and cannot well be mistaken.

The bank Ras al Mutáf, will on this course be passed in 13 to 15 fathoms, a very safe depth; the muddy appearance of the water, which extends some miles outside the shoal, is a good indication of approach to it by day. See page 267.†

Jebel Direng makes in an even mass with scalloped top; when these notches are in one, you are well past Ras al Mutáf shoal. This mountain is seen 60 miles.

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\* Formerly called by English seamen the Bardistán bank.

† Ras al Mutaf bank is reported to be extended to the southward.

In working from Kais to Ras al Mutáf, a vessel may do so either inside or outside Kais island, as convenient. The mainland is here very deep-to; a reef extends off the north side of Kais about one mile, on which you shoal the water quickly.

There is no danger on the Sambarún shoal.

If working up outside, the 20-fathoms line on the edge of the Pearl banks is quite far enough to stand over; and there is nothing worthy of remark till past Shaikh Shuaib, when a ship must not stand farther than 30 or 35 miles from the island on the off-shore tack, on account of the Shah Allum shoal. From this shoal the Persian mountains are nearly down, so that if the coast be high up above the horizon, a vessel cannot be near it (*see* page 257). If a vessel is not certain of her position she had better sight Shaikh Shuaib and take a departure from it before passing Shah Allum shoal.

The lead is no guide passing either Hindarábi or Shaikh Shuaib; the latter island is quite free from danger, and there are 45 fathoms only 2 miles south of the island. If convenient, a vessel can work through between this island and the main, where there is anchoring ground and no danger. If caught in a north-wester, Chirú bay, the anchorage off the east end of Shaikh Shuaib, or Shíwu, are convenient places of refuge. A vessel should not stand too close past the west end of Shaikh Shuaib on account of the flat off it.

Stiffe bank at 22 miles to the southward of Shaikh Shuaib, page 257, having from 20 to 15 fathoms water on it, is not a danger, but may be useful to get a cast of the lead on. There is another such direction bank, with 14 fathoms or perhaps less, in lat.  $26^{\circ} 45' N.$ , long.  $52^{\circ} 30' E.$  It is about 5 miles in extent.

From Shíwu to Táhiri the coast is very bold, with no anchorage except quite close in. Small vessels would find shelter in Náband bay, or Táhiri, but very close in, and much swell; the former place especially is not adapted for a vessel of any size.

In a north-wester, a vessel by making short tacks inshore could get up from Táhiri to Ras al Mutáf, when there would be too much sea outside. There is good shelter under this shoal. In working round it, do not come under 11, or at night 12 fathoms.

**Ras al Mutáf to Bushire.** — From a position 11 miles off Mukhaila island, in 14 fathoms, a course N.N.W. a little northerly for 80 miles will take a vessel opposite Ras Shagháb, the westernmost low sandy point of Bushire peninsula, in 6 to 8 fathoms, when Bushire towers will be in sight to the north-eastward. The soundings will be 15 to 17 fathoms, decreasing to 12 off Ras Halíla; which depth will by night keep her clear of the very low sandy point Ras al Khan, and at a safe distance from the coast.

The Asses Ears (called by the natives Bu Reyyál), on the lower range near the coast, are conspicuous; they are visible 45 miles, forming in three little pinnacles (*see* page 269.) Over this range is seen the great mountain Kuh Khormúj, which, though it forms a very remarkable peak when bearing to the southward of East, has nothing striking in its appearance viewed from the south-westward, where it presents only a long convex ridge.

The highest point on Bushire peninsula, a small tomb on the summit, is 150 feet above the sea, and visible 13 miles; the large house just south of the dome, or the date trees near Ras Halíla would be first seen, appearing like a low island. The peninsula is of even outline and light brown colour. Running up at night, a vessel should try to sight Ras Halíla; by paying attention to the lead she may stand in to 6, or even 5 fathoms, if necessary, until the land is seen, and run up along shore in that depth till about off Bushire, and then anchor. This will prevent her passing the place, and perhaps getting close in to Ras ash Shatt, which is so low that it is nearly overflowed at high water. Rockets or blue lights would be answered if there were any vessel of war lying in the harbour, or from the telegraph station at Rishahr. If so far out by day that the low land is not seen, the great bluff fall in the mountains near Gisakán is a useful mark; it bears N.E.  $\frac{3}{4}$  E. when in one with the town, and is visible 70 miles.

In working up from Ras al Mutáf, a vessel may make tacks of about 45 miles, so as not to approach Rennie shoal, or Fársi and Arabi islands. These latter are low sandy islets and deep-to, only visible 6 to 8 miles by day.

Ras al Khan may be approached to 12 fathoms; it is sometimes nearly overflowed.

On getting above the Asses Ears a ship should stand in to 10 fathoms, so as not to be too far out when about to make Ras Halíla.

**Bushire to the River.**—When off Bushire in 5 fathoms, a course N.W.  $\frac{1}{2}$  W. 28 miles leads to the anchorage off Khárag fort, passing Ras ash Shatt 3 miles off in 10 fathoms.

Khárgu is a mere sand-bank, with a reef extending three-quarters of a mile off it, and having 10 to 16 fathoms close to it. Khárag is visible 17 miles and will be sighted soon after Bushire buildings are quite below the horizon, but at night it is often not seen till quite close, being of light brownish colour. It has a Quoin hill at the north end, a bluff at the southern end, and a small tomb on the highest part. Kuh i Bang, a bluff hill on the Persian coast, is visible

from Khárag. The reef surrounding this island is nowhere half a mile from the shore, and has 7 or 8 fathoms quite close-to.

Working up to Khárag calls for no special remark ; the lead must be the guide standing towards Ras ash Shatt. Pilots are invariably taken on board for the further prosecution of the voyage to the river either at Linja or Bushire. For remarks on the rest of the passage, *see* the special description (pages 294–302). These pilots may be implicitly trusted for the passage thither from Khárag, or a vessel may make a direct course for the outer buoy at the entrance of the river, when the pilot does not take charge until the buoy is sighted.

**River to Khárag.**—When bound from the river to Khárag and Bushire, on clearing the bar and being in 5 fathoms, it is preferable to attend to the navigation oneself ; as, being in the open sea, the pilots are not required, except perhaps on passing Khárag. They then generally give up charge.

The course to Khárag is E.S.E., distance 90 miles. After crossing several deep channels or khors, and perhaps getting a shoal cast of 6 fathoms on the tail of the hard bank (least water at low water said to be 4 fathoms) off the Maidán Ali, the soundings increase, though irregularly, to 20 fathoms at 30 miles from Khárag.

If the island is made by day, a vessel may, if preferred, steer to pass between it and Khárgu, but if it has to be made by night, it is necessary to steer for the south end, which is a high bluff, and shows better by night ; the reef extends at most a quarter of a mile off the south end. Khárgu, being so low, would never be seen at night till aground on the reef.\* When the island is sighted (by day) the vessel would be in 22 fathoms, deepening to 25 or 26 close to the south end. When the island bears North the water will shoal quickly to 18, 14, and 12 as the vessel hauls round, remembering 7 or 8 fathoms is close to the reef. If running down before a shamál, gusts off the land may be expected when hauling up for the anchorage, which should be done gradually with the lead kept going, anchoring in 10 to 12 fathoms, after stretching about 2 miles up from the south point. Objects on shore are often obscured (*see* page 7).

When working down in a south-easter, the pilots, who do not understand the navigation of the open sea, are necessarily dependent on the vessel's observations.

If after leaving the bar a south-easter suddenly sets in, the vessel must carry on to get out to sea, as the pilots in that case will not

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\* Two steamers have grounded trying the passage through the strait at night.

attempt to recross the bar. If obliged to anchor, she would ride it out best on the Maidán Ali, where it is said the force of the sea is less than in the channels, or than when farther out.

**Passages down the Persian Gulf.**—The direct courses and distances being given for the passages up the Persian gulf, it is not necessary to repeat them here; the reader can readily refer to them, and reverse the courses for the passage down. The remarks are confined to points to which it is necessary to call attention exclusively for the passage down.

**Khárag to Bushire.**—By night a vessel would steer half a point to the eastward of the direct course, keeping the lead going on approaching Ras ash Shatt; and feel her way down along the outer banks of Bushire harbour till opposite the town, so as not to pass it. The flood tide being on the starboard bow, would render great attention to the lead necessary, so as to haul out as the water shoaled.

**Bushire to the Southward.**—A vessel would round Ras al Mutáf as in the passage up, and thence shape a course to pass outside Shaikh Shuaib. The west point of that island is very low and rocky, and not easily seen in thick weather or at night; vessels often find themselves while running down passing much closer to this island than they expected; perhaps the ebb setting towards the strait inside the island, or the flood acting on the starboard bow, may account for this indraught. This is now the more likely to happen from over anxiety to avoid the Shah Allum shoal.

In the event of a south-easter it would not be advisable to stand into Náband bay for shelter, as, if a shamál followed, it would be almost impossible for a sailing vessel to get out.

Nakhílu bay is the best place for anchorage in a south-easterly gale.

The west points of Hindarábi and Kais are similar to that of Shaikh Shuaib. If running before a north-wester, the extreme haziness of the air renders it necessary to exercise the greatest caution in making or passing any of the islands, the lead being little or no guide. Farúr is the easiest to see, as it is dark coloured, and high; there is also no reef, except off the west side, where a small ledge projects a few hundred yards from the island.

Shelter might be obtained, in a kaus, either in Cháarak or Mughú bays, but you must either anchor well up these bays, where you would be sheltered in a shamál, or be ready to weigh at a moment's notice. Off Linja, and thence to the Básidu flat, there is never much sea in easterly winds.



Hanjám sound is the next available anchorage. The Great Quoin is generally easily seen, even at night, but, if not seen, you are far enough to haul to the southward when you shoal in less than 40 fathoms, as you will then be past the Quoins. There is good anchorage behind Hormúz in a south-easter.

The coast of Bátina should be avoided ; it is a lee shore in a north-easter, and in the summer the current often sets to the north-westward along it. A vessel, therefore, leaving the gulf and being past the low point of Ras al Kuh, would shape a course for Maskat direct ; or in the summer to the eastward of the direct course, until Maskat bears South. In the south-west monsoon the swell will be felt before reaching Maskat, rolling up from the south-eastward ; it is perceptible even off Ras al Kuh. If not intending to call at Maskat in this season, it will be well to be near latitude  $24^{\circ}$  before opening Ras al Hadd, in case of having the wind hang at South to S.S.E., with a heavy sea.

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## CHAPTER II.

## ARABIAN COAST FROM RAS AL HADD TO MASKAT.

VARIATION 0°00 IN 1890.

**RAS AL HADD.**—The low cliffs of Ras al Junaiz sink into a low sandy shore, 3 miles below this cape, which is a very low sandy point and difficult to make out, with a few date trees and three round towers in the little town of al Hadd lying one mile S.W. of it. The town consists of some round towers and a number of mat huts, and contains about 700 of the Beni Ghazal tribe. The people of the town are civil, as is the case at all towns north of this. It is subject to the Sultan of Maskat. The authority of that prince below this point is quite nominal. A fourth round tower stands detached on the shore of Khor al Hajara.

Latitude of point : 22° 33' 0" N. Longitude : 59° 48' 0" E.

**Supplies.**—Bullocks, goats and poultry may be procured here, also abundance of fish, and fair water only in small quantities from al Hadd village.

**SOUNDINGS.**—To the north of Ras al Hadd no soundings are to be obtained more than half a mile off shore; to the east of it, the 100-fathoms bank extends nearly 4 miles, and the 20-fathoms line one mile from the shore. This bank is famous for large fish. There is no known danger on the coast between Ras al Hadd and Ras ash Shajar.

Between Ras al Hadd and Sur the 100-fathoms line is at an average distance of 3 miles off the shore, and from a few miles above that place to 10 miles north of Ras ash Shajar, the bank of soundings is only about half a mile broad.

**Challenger bank.**—About 40 miles East of Ras al Hadd, discoloured water with rippings was observed from H.M.S. *Challenger* in 1830, and two casts of 13 fathoms were obtained, with no bottom at 65 fathoms soon afterwards, the sea having resumed its natural colour. It has not since been found by vessels repeatedly sent to search for it, *See page 37.*

**ANCHORAGE.**—A vessel would best anchor with al Hadd town, West, in 8 to 10 fathoms, coral, half to three-quarters of a mile off shore; the water shoals rapidly from 10 fathoms to 7, 6, and 5 fathoms, the bottom being distinctly visible. This anchorage is quite exposed to all winds from the sea. In the S.W. monsoon, the best anchorage would be off Khor al Hajara in 12 fathoms, a quarter of a mile from shore.

**TIDES.**—It is high water, full and change, at 9h. 15m.; springs rise 9 to 10 feet.

**The Currents** round this cape are variable and strong, and depend on the prevailing winds. *See* also page 19.

**The COAST** changes its direction at Ras al Hadd to an average of W.  $\frac{3}{4}$  N. for 15 miles, to the town of Sur. Cliffs commence 2 miles west of the cape, and extend for 6 miles.

**KHOR AL HAJARA** is a small and shallow inlet, used by fishing boats; its entrance between low cliffs, is 2 miles W. by S. of Ras al Hadd, being the most easterly rocky coast northward of that cape; there are 2 fathoms in the entrance, shoaling gradually as you advance; the inner half of the inlet is dry at low water. Its direction is South for half a mile, and then East one mile, reaching close to the back of al Hadd village. A small vessel can anchor in the entrance in 4 to 5 fathoms, but open to the N.W.

**KHOR JARÁMA**, the entrance to which is  $1\frac{1}{2}$  miles West of Khor al Hajara, is a fine basin with a tortuous entrance a mile long, and only 150 yards broad, between cliffs 60 feet high. A white stone beacon 30 feet high has been erected on the extremity of the eastern entrance point. Its length inside is  $2\frac{1}{4}$  miles in a N.W. and S.E. direction; and breadth, one mile. The depths are 4 to 6 fathoms, mud, between the entrance points; but at a quarter of a mile farther in, shoal ground with a depth of 7 or 8 feet extends from the western shore, leaving on the east side a channel only 60 yards wide from cliff to shoal. The southern shore is low, with a mangrove swamp, and an isolated black flat-topped hill on its S.W. side, which is a good mark. This harbour might be entered safely by a steam vessel drawing less than 15 feet, if required.

**Anchorage.**—In the S.W. monsoon there is good anchorage on the bank off the entrance to Khor Jaráma, half a mile off shore in 10 or 12 fathoms, mud and sand, with the low west point apparently half-way across the entrance channel, and Ras al Hadd tower E. by S.  $\frac{3}{4}$  S. The anchorage is not safe in the N.E. monsoon.

**DIRECTIONS.**—A small flat-topped hill, bearing S.W. by S., leads up to the entrance.

Entering this place keep close to the eastern side till past the shoal a quarter of a mile within the entrance, which extends from the western shore and leaves no channel on that side; the channel on the eastern side is only 60 yards wide from cliff to shoal. Then keep in mid-channel and pass on either side of a small island dividing the passage at the mouth of the basin; the eastern channel is preferable, and anchor as soon as past the island. The tide runs 2 knots in the narrow entrance. Flaws of wind are, of course, prevalent in the entrance, vessels should therefore be prepared with a stern anchor in case of accident.

It is used by native vessels as a harbour of refuge only, as there is no village on its shore, nor is any water procurable. A town once existed on the south-west side, but it is said to have been abandoned from want of water. There is an abundance of fish in the khor, and several beaches on which the seine may be hauled.\*

**Ras Sherh** is a slightly projecting point of the cliff, 8 miles W. by N. of Ras al Hadd; from this point to Sur there is a ridge of low broken hills with patches of cliff.

**SUR** is a large town, or rather two towns, situated on a khor or backwater, in which small craft lie. There are also two forts surrounded with huts, to the westward of it; all included under the general denomination. The total number of inhabitants may be 10,000. When on with Sur creek, Jebel Khamís bears S.W. by S., this may be useful as a guide to find the place. Just northward of Sur the bank of soundings is only one mile wide.

The larger town, on the east bank of the khor, is called Heija, inhabited by the Beni Bu Ali; the other, Umm Kareimatein, by the Beni Janaba, who are often at feud with each other. Of the two forts the south-western and larger called al Heis is for the protection of the wells; the other is called Seneisala; the country inland is partially cultivated, and there are many date groves. A large trade is carried on between this place and India, Zanzibar, and the Persian gulf, in baghalas; it possesses also numerous fishing boats. The exports are dried dates and salt fish, and they manufacture a coarse cloth for turbans, &c. Many natives of Kutch (Banyans) are settled here, and the trade is very much in their hands; the Sultan of Maskat maintains a garrison in al Heis. The Sur people are characterized by a spirit of enterprize, and are bold sailors.

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\* See plan of Khor Jaráma on Admiralty chart No. 10e; scale,  $m=3$  inches,

The khor is extensive, but narrow at the entrance, with a bar having only 3 feet at low water, within it there are 2 or 3 fathoms. Inland, 2 miles to the southward, is another town in a date grove with a good bazaar.

There is little to be seen of the town of Sur from the sea; the two forts, on higher ground, are first seen.

**Supplies.**—Cattle and vegetables might be obtained here, but it is doubtful whether water could be spared for a vessel.

**Anchorage.**—A vessel should anchor off the town in 10 to 15 fathoms, sandy bottom, about a half to three-quarters of a mile off shore; there is also anchorage in 5 fathoms water, about a mile off the easternmost tower (West town). The water here is very clear, and the bottom can be seen at 10 fathoms. It is quite an open roadstead.

**The COAST** above Sur sweeps round gradually till near Ras ash Shajar where it runs nearly north and south, and from which point, to within a few miles of Sur, the precipitous mountains Jebel Kalhát and Jebel Beni Jábir extend close down to the sea. These mountains are in two ranges, one behind the other, both sinking into the plain together, just above Sur. When at a great distance to the northward, the south extreme of these mountains has been mistaken by strangers for Ras al Hadd. They are of regular outline; the coast-range averages 4,500 feet, the back range is higher, probably over 6,000 feet. Above Ras ash Shajar they recede from the coast, ending at the Devil's gap.

**Kalhát** is a little village, 11 miles north-west of Sur. There is said to be an anchorage for small craft quite close in, sheltered from northerly winds by a small projecting point. The anchorage for a ship would be very deep and close in. There is good water in wells; and bullocks, sheep, poultry, and vegetables are procurable in small quantities, at this and the following villages.

**TAIWA** or **Taiwi**, a large village and date grove in a gorge, 8 miles to the southward of Ras ash Shajar, with a lagoon of fresh water 400 yards from the sea. There are many fruit trees. It contains about 300 men.

Off this place no bottom was obtained with 100 fathoms, a quarter of a mile from the beach. At  $3\frac{1}{2}$  miles south of this place is an anchorage called Haiwa; there are no inhabitants, but limestone of fine quality is shipped thence for India. H.M.S. *Dragon* anchored off Taiwa, in 9 fathoms close to the beach, to the northward of a small spit.

**Ghail Shaháb**, a small village with a tower on a little eminence, is  $1\frac{1}{2}$  miles north of Taiwa, at the entrance of a deep chasm or wadi in the mountains. A fine stream of excellent water issues from the valley, and forms a lagoon within 50 yards of the sea, very convenient for vessels watering. The anchorage is in 20 to 30 fathoms, a third of a mile off shore. A vessel should weigh on the approach of a shamál. Between this place and Ras ash Shajar is an anchorage called Makalla wabar, where native boats find shelter from a north-wester. Fins is a small village about half way between this place and Ras ash Shajar; and Dagmar another, a little north of the last; they, like the others lying at the foot of these hills, have good water and fruit trees, &c.

**RAS ASH SHAJAR**, situated about 40 miles north-west from Ras al Hadd, the south entrance point of the gulf of Omán, is a low sandy point, well defined only when seen from close inshore, with a small village called *Thibáb*; this and the last two villages have about 200 men each; about  $3\frac{1}{2}$  miles southward of Ras ash Shajar, the mountains begin to recede from the coast, the low land continuing to about  $3\frac{1}{2}$  miles northward of the cape, where the mountains again approach the beach. Native boats find shelter from the north-wester under this point, but it must be very close in. The general direction of the coast between this point and Maskat is N.W.  $\frac{1}{4}$  N. 52 miles.

A shoal, on which the British barque *Marian Moore* was wrecked in 1879, extends about three-quarters of a mile from Ras ash Shajar. H.M.S. *Teazer*, 1879, anchored on this shoal in  $5\frac{3}{4}$  fathoms, rock and sand, about 4 cables from the shore, with Fins tower bearing S.  $7^{\circ}$  E., and east extreme of Ras ash Shajar N.  $54^{\circ}$  W.

**MOUNTAINS.**—The range Jebel Beni Jábar recedes from the coast, terminating abruptly in a great bluff on the south side of the Devil's gap, 22 miles W. by N. from Ras ash Shajar, and 12 miles from the shore.

North of this gap is another range of mountains (6,230 feet) extending N.W. and S.E. about 12 miles, of even outline on the summit, with one small peak; and ending to the north and south in bluffs, that at the south end of the range being very grand, falling in steps to the bottom of the valley or gap. It lies from 12 to 14 miles from the coast, and is called Jebel az Zátari, or Jebel Karyát. These two ranges are visible 80 miles; between them lies the great valley known as the Devil's gap (*see* page 9), and which natives call Wadi Hail al Ghaf. When it bears W.S.W. it is quite open, and forms a very remarkable landmark, although the gap is conspicuous

from W. by N. to S.W. by S. Sometimes, when the mountain tops on both sides are covered with a streak of dark clouds, forming as it were a bridge over the gap, the sky is seen clear through underneath; which in the evening has a very remarkable appearance. Squalls or heavy gusts blow out of this valley at times in the winter months.

These with the next-mentioned mountain are the landmarks first made on this coast, unless in very hazy weather. If within the limit at which they are visible, it is recommended to look out when the sun is about setting, as the outline of these mountains will then often be visible for a short time; perhaps only for a few minutes.

**JEBEL ABU DÁUD** (4,000 feet) is a detached mountain of irregular outline, deeply furrowed, and of light colour, rising abruptly over the cape of the same name. Out at sea the *Jebel az Zátari* is seen over it. From a distance when bearing N.W.  $\frac{1}{2}$  W. it makes like an island, with a long slope on the inshore side, and steep to seaward; there being a wide valley between it and the back range. It extends 8 or 9 miles along the coast, and is visible 60 miles.

From Abu Dáud to Maskat there is a confused mass of hills near the sea, with range behind range of mountains behind them.

**SOUNDINGS.**—Ten miles north of Ras ash Shajar the bank widens out, and opposite *Karyát* is 3 or 4 miles wide; off Ras Abu Dáud, 100 fathoms is less than one mile from the coast, thence to *Ras al Khairán*, probably 7 or 8 miles; decreasing again to 2 and 3 miles between the latter place and Maskat point.

The 20-fathoms line is nowhere more than  $1\frac{1}{2}$  miles from the shore, while at Ras Abu Dáud, *Khairán*, and Maskat it is quite close to the cliffs. There is no danger on this coast except a small bank of foul ground which extends about half a mile off shore at *Karyát* as *Saghira*.

**COAST above RAS ASH SHAJAR.**—The low cliff continues, trending to the north-west till close to *Karyát*, when the shore becomes low and sandy.

**KARYÁT**, two small villages about 6 miles apart, with a large date grove extending between them on a sandy plain, intersected by watercourses which, in rains, discharge the waters from the Devil's gap. The Beni Jábir are the principal tribe between this place and *Kalhát*; above this place are the Beni Battásh.

The northern village is 3 miles south of Ras abu Dáud, and called *Karyát al Kabira*, or the large (the other being called as *Saghira*, or the small). It is close to the hills, and almost hidden in the date

grove; a good mark for it is a rocky islet about 50 feet high, and close to the beach. One of the watercourses runs round the north end of the grove, forming a small creek.

Karyát as Saghira lies at the south end of the date grove, and near a projecting, low sandy point,  $7\frac{1}{4}$  miles S.E. by S. from Ras Abu Dáud. The foul ground, before mentioned, begins at this point, and extends 2 miles along shore to the northward, not above half a mile off shore; it has not been sounded.

A white fort,  $1\frac{1}{2}$  miles from the low point, will be seen on a small mound above the trees, and indicates the position of the village. These two villages contain about 1,000 men of the Beni Sinán tribe. When near this part of the shore a low range of hills or undulating ground is seen between the coast and the Devil's gap.

**Supplies.**—Cattle, fowls, fruit, vegetables, and water can be obtained here at a cheaper rate than at Maskat, such supplies being also sent to Maskat from this place.

**ANCHORAGE.**—The best anchorage is in 12 fathoms, sand, with the islet S.W., and Ras Abu Dáud N.N.W.  $\frac{1}{4}$  W., about  $1\frac{1}{4}$  miles off shore. A steam vessel may anchor closer in in  $4\frac{1}{2}$  to 5 fathoms, a quarter of a mile off the shore, between Karyát islet and Ras Abu Dáud.

**RAS ABU DÁUD** is a steep rocky point, and has a rocky islet about 100 feet high, 300 yards north of it, with a channel between it and the cape of 3 to 4 fathoms. The coast for 2 miles south of it is rocky, and forms several points. The exact point is not easily made out unless quite close in. Small vessels would be sheltered in a north-wester in the little bay just south of the cape; but would not be able to get out if a south-easter came on.

The coast for 4 miles north of the cape is formed by cliffs, extending N.W.  $\frac{1}{2}$  W., the mountain Jebel Abu Dáud rising abruptly from them; after which the coast is low sand as far as Sifa, the mountains receding from the coast, and leaving a space of level land between them and the shore.

**Sifa** is a square tower on a mound about 60 feet high, with date grove, near the sea,  $10\frac{1}{4}$  miles N.W. of Ras Abu Dáud. A range of rugged, precipitous hills extends along the coast from this place till 6 miles beyond Maskat, the coast line being very irregular and almost entirely cliffs with little sandy bays at intervals, and numerous inlets or coves.



**RAS AL KHAIRÁN**, a perpendicular cliff about 60 feet high, of light colour, as are also the hills above it, is 15 miles N.W.  $\frac{3}{4}$  N. from Ras Abu Dáud, and projecting 2 or 3 miles beyond the general run of the coast from that place to Maskat. There are four little sandy bays to the southward of this point, of which the one close to it forms a cove half a mile deep, with 3 fathoms in it and open to the N.E.: a rocky peninsula forming its east side is called Ras Kizkizán. The next bay is insignificant; in the third there is a grove of date trees, Khaisat or Sífat ash Shaikh; the last little bay is called Khaisat as Sum.

**BANDER KHAIRÁN**.—Immediately westward of Ras al Khairán are two islands, not easily distinguished owing to their uniformity of appearance and height with the mainland, and to their not projecting beyond the line of the coast.

Behind the western and larger is Bander Khairán anchorage.

The smaller island is half a mile long, and the channel behind it only 200 yards wide, tortuous and very shallow; although at the entrance it has 3 to 5 fathoms. The western island (300 feet high) is steep and rocky, and three-quarters of a mile long; close to the east end is a small detached rock, between which and the eastern island is the entrance channel 600 yards wide, with 15 fathoms in it. The strait between the south side of the island and a projecting point of the coast opposite forms the anchorage, which is 150 to 200 yards wide. There are  $3\frac{1}{4}$  to  $4\frac{1}{2}$  fathoms in this part; off the south-west corner of the island it is wider, and has a rocky islet in the centre, with 6 fathoms on its east side, and 3 to 4 round it.

Near the south end of this islet a narrow passage leads into a shallow bay, extending a mile to the southward, where it ends in a swamp. There is a large grove of date trees and a small village. The western entrance is about 150 yards broad, half a mile long north and south, and has 9 to 7 fathoms in it. This harbour is only frequented by fishing boats; the winds are very baffling, particularly in the western entrance, and blow in violent gusts during north-westerns.\*

**Yiti**, a small sandy bay, with a little fishing village and a few date trees in the valley,  $4\frac{1}{2}$  miles W. by N.  $\frac{1}{4}$  N. from Ras al Khairán: from this bay to Khairán the coast is rocky cliff.

**BANDER JISSA** is another small anchorage 5 miles S.E.  $\frac{3}{4}$  S. from Ras Maskat, formed by a precipitous light-coloured island 600

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\* See plans of Bander Khairán, and Bander Jissa, on Admiralty chart, No. 10c; scale,  $m=3\cdot7$  inches.

yards long and 140 feet high, which stands in the entrance of a bay three-quarters of a mile in length and depth. The eastern entrance is 300 yards broad and has 7 fathoms in it, the western one is blocked up by a flat rock having only  $1\frac{1}{2}$  fathoms on each side of it. The bay has 4 to 7 fathoms in it, and an indented outline with an islet on the S.W. side, to the west of which is a large village and date grove.

The coast is rocky between this and Yiti, and there is a succession of rocky points and sandy bays, with several villages between it and Maskat. Al Bustán, the southernmost of these villages, has a date grove; the inhabitants are cultivators. Kanṭab, a small fishing village, has a pyramidal rock standing in the sandy bay close to the shore. This place lies under the hill called Maskat saddle.

**Sudáb**, a small village in a cove which might afford shelter in a north-wester to small craft; it is separated from Maskat by a small ridge, having a wall and gate in the pass; there is only a footpath between the two places; the coast on both sides of this place is a mass of rugged hills with cliffs near the sea.

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The remarks on the coast from Ras al Hadd to Sudáb are partly from the report of Lieut. A. Grieve, I.N., 1849.

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## CHAPTER III.

ARABIAN COAST, GULF OF OMÁN. MASKAT TO SALÁMA  
WA BENÁTAHA, OR THE QUOINS.

VARIATION 0°00 in 1890.

**MASKAT** is the capital of Omán, and residence of the sultan or ruler, whose territories extend along the coast from Ras Musandam to Dofar. Including the adjacent villages and towns, from Sudáb al Matra, it may contain about 60,000 inhabitants ; but this is merely an estimate.\* The independent country as far as Abu Thabi to westward of Musandam is also called Omán.

The Fisher's rock is in latitude  $23^{\circ} 37' 55''$  N., and longitude  $58^{\circ} 35' 58''$  E.†

The ruler of Maskat is properly called Sultan or Seyyid. The extent of his dominion in Arabia is practically limited by the distance at which he can enforce his authority, which, in general, is only near the sea-coast ; he has a small regular force of Arabs, Makránis, and Wahnábis, who garrison his forts and other possessions ; they are only armed with matchlocks, swords, spears, &c. He has lately obtained a few field-pieces and some artillerymen from the Persians. He also holds Gwádar on the Makrán coast.

The fleet of the late sovereign was divided between Zanzibar and Maskat. The Maskat squadron consisted in 1860 of an old-fashioned 36-gun frigate, one or two corvettes, and a few brigs, armed baghalas, &c., but it has now ceased to exist. The Sultan has two small steamers.

The whole of the fortifications, both landward and seaward are in a very dilapidated state ; the guns are chiefly Spanish and Portuguese, the iron ones quite rusty and useless, and the carriages dropping to pieces. A few brass guns are in better condition ; one fine old Spanish gun in Meráni fort has the date 1606.

The Maskat Government has treaties with Great Britain, France, and the United States. Seyyid Said, a former ruler, was a faithful ally of Great Britain, and fought with us against the pirates, &c. Maskat pays a religious tribute, or tithe, to the Wahnábi chief. The population of Maskat and Matra is very mixed, with a large infusion of African blood. Kalbú, Riyám and Arbak are inhabited by a higher class of Arabs. At Kalbú are the Beni Marázik ; at Riyám

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\* See Admiralty plan of Maskat, No. 2,869 ; scale  $m = 8\frac{1}{4}$  inches.

† The observation spot, in small sandy bay on west side of cove, was  $20''$  south and  $28''$  west of this rock.

the Beni Ahmad ; Shateif, Mateira, and Sudáb villages are inhabited by fishermen.

**Supplies.**—Notwithstanding the barren appearance of this place the country inland is in many places fertile, and furnishes considerable supplies. The following articles are obtainable : firewood ; water ;—this latter is brought from the wells in the suburbs, in a small aqueduct, by the side of the great watercourse, to the landing place and brought off in native boats ; if a vessel has no casks, they would bring it off either in bulk in a boat, or perhaps in one of the large wooden tanks used by baghalas, but it is advisable to see that the tank has been cleaned out properly ; occasionally, after a long drought, the water is scarce and bad ; but as a rule, fair and in sufficient quantity ;—sheep and cattle (the latter are best) ; vegetables ; fruit, viz. :—limes, oranges, grapes, pomegranates, mangoes, plantains ; fowls, plentiful and cheap ; flour, all ground in hand mills ; Arab bread ; rice and dhol (Indian pea), which come from India ; and the usual other articles required for a ship, excepting spirits, salt meat, and biscuit. Fish is plentiful and cheap. Coal is obtainable here, the Indian Government keeping a supply in a depôt at Makalla for the use of government vessels—about 2000 tons annually.

**British Agent.**—There is a British political agent here, with the rank of consul, also an American consulate. Price currents, rate of exchange, &c., which vary much, would be obtainable from him. There is a British post office in connexion with the mail steamers.

**Currency** (see Introduction).—The dollar is the coin preferred. The rate of exchange is settled by the Banyans, of whom more is said below. The Indian copper coinage varies in value here compared to its nominal value.

**Trade.**—The exports are : dates, fruit, fish, cotton, piece goods, grain, rice, drugs, spices, mats, &c., a few asses ; salt is imported and re-exported to Calcutta, also dried fish, and shark fins, &c. Dates are now chiefly sent to America.

The imports, on which 5 per cent. duty is levied without distinction, are :—grain and rice, spices, coffee, drugs, and piece goods, and twist, some timber and rafters, metals, indigo and sugar, ghee, silk, cotton and native fabrics, &c. Petroleum oil is also imported. There are several thousand Hindú traders settled here, and the trade is much in their hands ; they have always been encouraged by the Maskat Government. The customs are farmed to some of these men for a certain annual sum. They only settle here temporarily, and do not bring their families with them. A small colony of these enterprising men is to be found in most towns of the coast of Arabia.

The manufactures are few: certain kinds of cloths used by the Arabs, are woven, and arms, as swords, matchlocks, &c., made here. A small quantity of pearls and mother o' pearl are brought here for re-export.

The gulf mail steamers, to and from India, call here every fortnight, down as well as up. There are several large square-rigged ships belonging to this port, besides a great many baghalas and other native craft. A few American ships visit the port.

**MASKAT COVE** is the eastern of five coves, lying between Ras ash Shateif and Ras Maskat, a distance of only  $1\frac{3}{4}$  miles. It is formed by the steep rocky Maskat island, and a smaller one, on the east side; and a high point of land on the west.

Maskat island, generally called there al Jezíra or the island, 350 feet high and precipitous all round, is 1,400 yards long by 200 to 500 broad; it has deep water close to outside; 30 fathoms at 2 cables off. Its coast line is very irregular, and one-third from the south end, it is nearly divided by two little coves opposite each other, the hill being quite low just between them. The northern point of the island, called Ras Maskat, is a round sloping bluff, while the points to the westward of it are cliffs. On its west side just within the cove, is a fort or battery near the water, with a tower half-way up the hill, called Síra.

Off its north point lies Fisher's rock, 10 feet above water, which is 20 yards across, and separated from the island by a strait 50 yards broad, with 2 to 3 fathoms in it; this rock may be rounded quite close, as at 5 yards off it there are 6 or 7 fathoms.

The cove is three-quarters of a mile long N.N.W. and S.S.E., and half a mile wide at the entrance; half-way in it is contracted to a quarter of a mile by a projecting point running out East and West on the west side, inside which it widens; at the head it is 300 yards across. The soundings are 9 to 13 fathoms in the entrance, shoaling gradually to 6 and 7 at the narrow part, and to 2 fathoms about a cable from the white sandy beach at the head of the cove, on which the town stands. There is deep water rather close to all the points round the cove; the little bays in it are shoaler.

The west side is a detached precipitous ridge 436 feet high; its north point is called Ras Kalbú. The projecting point before mentioned is 250 yards long by 60 broad, and about 100 feet high, being a spur of the main ridge of Ras Kalbú, and on it is a fort with two rows of embrasures, and the ruins of a round tower on the highest part,—called also Síra (or Síra al Gharbi, *i.e.*, the western, if required to distinguish it from the other). On the inner side of this

point is formed a bay called Makalla, with three fathoms and under, where the smaller native vessels anchor; the government coal depôt is in this bay. There are several dwarf towers on the different peaks of this ridge, which slopes down at its southern end to a cliff about 150 feet high, with a large fort on it called Meráni, which has several round towers on the hill, and a battery near the water level.

This fort, which was built by the Portuguese in 1588, is at the bottom of the cove, and close on its south side, is the landing place, which is on the rocks just where the great watercourse discharges itself into the cove; here also, is a small place for hauling up and repairing boats.

The front of the town occupies the bottom of the cove, and is built close down to the water along the beach, so that the sea washes against the houses at high water. The walls of the town enclose a space of 700 yards by 250, while the suburbs of mat huts, occupy every available piece of level ground in the vicinity. The wall is built on the west and south sides, the east and part of the south side being built close up to, and even against the face of the hills. The sultan's palace is the largest building facing the sea, and to the east of it is a small wharf with the custom house. The mosques are small, and like all mosques in Omán, have neither domes or minarets. There are several towers on the hills behind the town, one of which called Buma Sáli, built on a ridge, (highest part 500 feet), quite overlooks it and the cove. The British consulate is at the east end of the town, in front of the little gap at Moghab.

Between the town and Maskat island are two small detached hills, the southern of which, about 100 feet high, is joined to the town by a low sandy isthmus, and has a large fort\* on it called Jaláli, which has two tiers of casemated embrasures, and a round tower at each end; there is a fine flight of steps cut in the rock up to this fort. This and Meráni are the two principal forts, and quite overlook the town. The other hill, about 60 feet high, forms an islet at high water; with a passage, called Duweira, with only one foot at low water, and 30 yards wide between it and Maskat island. Behind these is a bay or series of little coves, between Maskat island and the main; there are two remarkable natural pillars of rock in it, one close to the S.E. end of the island, the other half a mile to the southward; just below the latter is a projecting point called Ras Kanáda, a perpendicular cliff about 250 feet high, conspicuous from the northward.

In one of these little bays called Moghab, close to the south-east of Jaláli fort, the Red sea and Karáchi telegraph cables were landed.

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\* Built by the Portuguese.

**TIDES.**—In Maskat cove it is high water, full and change, at 9h. 15m., and the rise and fall is 8 to 9 feet.

**DIRECTIONS.**—Fahal islet, 280 feet high, is of light colour, quite precipitous, deep-to all round, and has no danger near it; it generally shows light coloured against the land. (Page 67.)

From the eastward, when the sun is shining on Jaláli fort in the morning, it sometimes shows white, to the southward of Maskat island against the hills behind; all the hills about Maskat being of a very dark colour. Approaching Maskat from seaward, either from the eastward or westward, the Saddle hill, 1,340 feet high, is remarkable; it is formed by two sharp peaks, the highest of the very jagged dark range behind Maskat; they are in one when bearing E.N.E. or W.S.W. From the northward this hill is not so conspicuous, as the peaks are some little distance apart. In the background will be seen, in clear weather, the Karyát range of mountains, and to the westward, the mountains Jebel Táin and Jebel Nakhl, with lower ranges between them and the coast range. The place has often been passed by strangers, especially steamers, as the towns do not show well under the dark hills, and lying at the bottom of coves, are only visible with the cove open. As there is no danger on this part of the coast, steamers especially should not be far out, and then Fahal island cannot be overlooked. If not seen in hazy weather, she should steer for the Saddle, the most rugged part of the hills.

In the daytime a vessel would run into Maskat cove, and anchor well over to the west shore, which is the weather side in a north-wester. If only calling at the place a sailing vessel may anchor in 13 or 14 fathoms in the entrance; but if requiring supplies, &c., it is advisable to anchor, if there is room, about abreast of Síra al Gharbi point, and pretty close to it, just clear of the mooring buoys, belonging to the mail steamers. The native ships lie further in.

The place is nearly open to the north-wester, which blows a couple of points off the west side, while the sea sets straight into the cove; so that vessels making a long stay here, always use a stern anchor to keep their head on to the swell. The north-easter or nashi, also sends a heavy sea into the cove, and there is little or no shelter from this wind. The bottom is sand and shells, but with a long scope of cable vessels need not apprehend driving, as the anchors would have to drag so much up hill; and when near the rocks there appears to be a rebound of the wave, which lessens the strain on the cable. Outside the cove, in depths above 20 fathoms, the bottom is clay or mud.

As the wind nearly always blows into this cove, sailing vessels generally have to warp out till able to make sail, but there is often a light land wind at night sufficient to enable a vessel to get out.

In the hot weather vessels can anchor opposite the gap, and with the stem canted in towards the island by a warp, which is a much cooler berth. A red buoy will be found about 50 yards from the island to make a warp fast to. The spring should be eased up during northerly winds.

**By night**, a vessel arriving from the eastward should run up the coast, keeping to the southward of the parallel of Ras Maskat, or make short tacks up to, so as to be sure of not passing it, as it then forms the extreme of the land; and she should remember to round the *first* point, and as close as possible. Fisher's rock would be seen, probably, by its horizon being lower, or as a notch in the water line of Muskat island; after rounding it keep a look-out for the shipping, and anchor in the mouth of the cove, well over to Ras Kalbú, which by night always appears much closer than it really is.

From the westward or northward a vessel should make Fahal, and take a departure thence; the course and distance to Fisher's rock is S.E. by E.  $\frac{1}{4}$  E. 6 miles. Remember, however, that Ras Maskat will be the last point, and nothing will be seen to the eastward of it. The shipping do not show well against the hills, particularly by night, but when close, their hulls might be seen, especially from aloft.

The four neighbouring coves are called after the towns situated in each; Kalbú, Riyám, al Matra and Shateif.

**Kalbú** is a small cove between Ras Kalbú, before described, and a point with an isolated hill about 100 feet high, with a round fort on it. It is 3 cables long by  $2\frac{1}{2}$  broad, with 8 fathoms in the entrance, and shoaling gradually up to the town; is quite open to the prevailing winds, and not frequented by shipping. There is a spit of rocks, covered at high water, extending one cable W.S.W. from Ras Kalbú.

In appearance the town resembles Maskat on a smaller scale. It extends a quarter of a mile back up the valley from the sandy beach, and nearly joins the suburbs of Maskat, being separated from them by a low ridge, over which the footpath passes. There is a wall and gate to cut off the communication. The hills on the west side of Kalbú are about 250 feet high, and are, like Ras Kalbú, detached from the main range of hills behind.



Between the isolated hill forming the west point of Kalbú cove and this ridge of hills, is a sandy isthmus, on which is a little village called Doha, with some stone houses; a part of the village is detached, and lies a little back in the hills to the west of the point.

**Riyám cove** is about the size of Kalbú, with soundings decreasing from 5 fathoms. It is not visited by vessels, being also open to the prevailing winds.

Between this cove and Doha a small spit of rocks runs off half a cable. Riyám village is smaller than Kalbú, and extends a quarter of a mile up the valley, whence there is a footpath for a quarter of a mile, over a fortified pass, to the suburbs of Maskat; to the west of the village is a steep and rugged pass to Mateira and al Matra. The west point of Riyám cove is a detached hill about 80 feet high, quite precipitous, and having a sunken rock 70 yards off to the northward of it; to the westward of this point is a bight, used by small native craft in a north-easter, and sheltered partly in a north-wester by Ras Kowásir; it is called Bander Dináki or Dinági.

**MATRA COVE**, half a mile broad, and 6 cables deep, lies between the west point of Riyám cove and Ras Kowásir. It contains several little bays and villages, besides the town of al Matra, which stands at the head.

Next to westward of Bander Dináki is a small sandy bay, with a large village called Mateira,\* extending back to some distance. A detached hill about 100 feet high, with a large castle on it called Sira† Matra, separates this village from al Matra; there is a footpath round inside this hill to that place, which nearly joins Mateira.

Al Matra is a town about the same size as Maskat, the part inside the walls is well built. It has a front of nearly half a mile, along a fine sandy beach at the head of the cove. The only pass from Maskat into the interior by land is from this place, which is fortified on the land side, wherever the hills are not inaccessible, by a wall and towers; there are also many detached towers on the hills round the town.

The communication by land with Maskat, which is very rugged, is through Mateira; and thence either to Riyám and Maskat (*see* Riyám), or from Mateira to Maskat direct by a very rugged steep pass. These paths are not practicable for loaded animals. Everything is sent between these places by sea in large canoes; and, if not blowing hard, the general mode of transit is by boat. Large numbers of these canoes ply regularly between Maskat and al Matra, most of

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\* *I.e.*, Little Matra.

† Sira means a hill fort near the sea.

the merchants of the former place residing here. This town is under a wáli, or deputy of the sultan. The Khoja sect have inside the town a separate fortified quarter containing about 500 houses, into which none but Khojas are admitted.

At two-thirds of a mile South of al Matra castle is a remarkable sharp peak, called on the chart Matra peak, the highest on that range.

On a projecting rocky hill, about 60 feet high, forming the north point of Matra bay, is a small fort, and in the sandy bay on the other side of it lies the town of Arbak, which has a tower and wall separating it from al Matra in the pass behind the hill. There is another small fort on a hill immediately north of Arbak.

**Ras Kowásir**, a precipitous point about 200 feet high, has a rocky ledge, on which are several detached high rocks, extending  $1\frac{1}{2}$  cables off it, and a low islet a cable north of it.

**ANCHORAGE.**—Matra cove affords good shelter in a north-wester, but is open to the nashi, or north-easter. The larger native vessels always anchor in this cove in preference to Maskat, but square-rigged vessels seldom use it, as they go to Maskat. The anchorage is close under the shore, between Ras Kowásir and Arbak. The landing place at al Matra is at either end of the sandy beach; in a north-easter the best place to land is on the rocks just at the north end of the beach.

**Shateif cove, or Shateif**, the last of the series of coves about Maskat, is small, open to the north-easter, and is never used by shipping. The little village is insignificant. There is a footpath through the hills to Arbak. On the north side is a high ridge, about 350 feet high, which ends in the perpendicular bluff called Ras ash Shateif; it has 20 fathoms at only  $1\frac{1}{2}$  cables off.

**MASKAT to SIB. — ASPECT of COAST.\*** — From Ras Maskat to the end of Sib date groves is a distance of 25 miles in a W. by N. direction; the coast, from Ras al Hamar, a projecting point 6 miles West of Maskat, falling back in a sandy bay called Kubbat al Hail. The hills here recede from the sea to the south-west, increasing in height till they culminate in Jebel Táin, 5,250 feet high, 21 miles from the cape; they are not remarkable in form, but one of the lower mountains of the range, about 4 miles from the shore, is of white colour.

There is a great valley, called Wadi Semail, between this range and the Nakhl range, 7,740 feet high, which lies in a N.E. and S.W.

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\* See Admiralty chart, N.E. coast of Arabia, No. 10c; scale,  $m = 0.1$  of an inch; also Persian gulf, No. 2,837 a; scale,  $m = 0.08$  of an inch.

direction on the west side of the valley ; it has four principal peaks, one of which Jebel Nakhl, 7,000 feet high, is singular in form, like a pepper box on the top of the mountain ; it is seen off Maskat, but afterwards gets shut in behind the other peaks, and is not again seen till near Barka ; these mountains are visible 90 miles.

**SOUNDINGS.**—There is no danger on the coast ; off Maskat the bank of soundings is not more than 3 miles wide, but it widens to the westward, and is about 15 miles broad at Sib. The 20-fathoms line runs from Ras Shateif nearly straight to Fahal islet, and thence is about 3 miles off shore till near Sib, where the flat, near the edge of which the Daimániyat islets lie, begins. The bottom is mud and sand, above 20 fathoms chiefly mud.

**Darseit.**—From Ras Shateif the cliffs run about West for a mile to Eint and Darseit, two little villages in small sandy bays, with a projecting point to eastward of them. The latter is the western and larger, and has several towers ; it is inhabited by fishermen, and both communicate, by footpaths through the hills, with Shateif and Arbak. Close to the westward of Darseit is a remarkable red hill on the shore, about 400 feet high, and forming in two paps with cliffs at the base.

**RAS AL HAMAR\*** is a point of cliffs, about 150 feet high, of red colour,  $3\frac{1}{2}$  miles W.  $\frac{3}{4}$  N. from Ras Shateif ; and there is a sandy beach,  $1\frac{1}{4}$  miles in length, between it and the Paps near Darseit. A sloping point, close to the westward of the beach, is called Ras al Abyaz (or the white point), from its colour.

**FAHAL ISLAND**, already noticed in page 63, lies 2 miles off Ras al Abyaz. It is one-third of a mile in length, and is visible 18 miles, there is a clear passage between it and the main, with 10 and 12 fathoms, deepening to 20 close to the island. This island can be landed on, and ascended, only on its south-west corner, the cliffs overhanging all round. The bank of soundings is probably only 3 to 4 miles wide outside the island.

**AL BÁTINA COAST.**—From Ras al Abyaz the coast falls back, and forms the bay called Kubbat al Hail, which has a low sandy shore, with sand-hills and date-groves in places. From a little creek one mile S.W. of al Abyaz, where the cliffs end, the Bátina (*i.e.* level) coast begins extending for 150 miles to the neigh-

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\* The Red cape.

bourhood of Khor Kalba, with an average width of about 12 miles ; it is well cultivated, having date-groves almost the entire length, with many towns and villages.

The whole of this coast is free from danger, excepting the Daimániyat islands, and has no harbours, or even creeks, that will admit anything but the smallest boats. It is quite open to the shamál and nashi ; for the latter it is a dead lee shore ; and consequently all the trade with Maskat is carried on in small boats, which can be hauled up in bad weather.

**Supplies.**—A vessel visiting this coast, would be able to obtain cattle, poultry, fish, and vegetables at all the towns. Water, though plentiful, would be tiresome to wait for, unless her own boats were used. It is obtained from wells, often sunk only a short distance from the beach. Firewood only in limited quantities. Quantities of dates, which are very fine, are exported from this coast.

**Khuwair** is a little creek, about one mile south-west of Ras al Abyaz, where a large watercourse discharges itself ; there are a few huts there, and mangrove trees are cut for firewood.

**Khalíl** is a small village, with fort and date-grove, the first in the Bátina district, about 3 miles from the commencement of the sandy shore.

**Hail** is a little village on the coast, to the south-west of Sib ; the date-groves extend continuously from this place till 2 miles beyond Sib.

**SIB** is a scattered town chiefly built of mat huts, with two small detached forts ; several boats belong to it. There is a bazaar, and also extensive date plantations and many gardens. Supplies are sent hence by boats to Maskat. The anchorage, three-quarters of a mile off shore, is in 5 fathoms, sand, quite open to the prevailing winds. It is frequented in the summer by visitors from Maskat, who erect temporary houses. The ruler of Maskat is often here for change of air, as it is healthier and less hot than Maskat, and more open to any breezes. It is governed by a wáli or deputy.

**SIB to SUÁDI.—ASPECT of COAST.**—Suádi point is  $45\frac{1}{2}$  miles W. by N. of Ras Maskat. After passing Sib, the great bluff of the Jebel al Akhdhar, 9,900 feet high, will be seen ; it is visible 110 miles, and has been seen to dip below the horizon in very clear weather, when 115 miles distant ; it has two steps on the top, the north face appearing nearly precipitous, and the top sloping gradually from the steps to the westward ; there are lower ranges between it and the sea.

The coast continues low and sandy, projecting a little west of Sib, with date-groves nearly all the way. The Daimániyat islands are in three groups, and lie nearly parallel to the coast, at about 8 miles distance.

**SOUNDINGS.**—The bank of soundings extends 5 or 6 miles to the northward of the Daimániyat islands; the bottom is mud and sand inside the islands, over 20 fathoms chiefly mud: the soundings inside of them are regular, and, except the eastern group, under 20 fathoms.

The only irregularity on the coast is off Ras al Ghaf, a broad low point, at 5 miles above Sib, there is a space of 4 miles without any date trees near the shore, with sand-hills a little back from the beach. At the most projecting part are two large ghaf\* trees, and  $1\frac{1}{2}$  miles off this point is a sand-bank with not less than 3 fathoms on it, and 4 inside it. Between this and Suádi point the coast forms a bay, in which is the large town of Barka.

**BARKA.**—The fort of this town bears S.E.  $\frac{1}{2}$  E.  $7\frac{1}{4}$  miles from Suádi point, contains few houses, and is dilapidated; in the centre is the sheikh's castle, a lofty Arab fortress, which is visible 10 miles, and strong for such a building. It is in latitude  $23^{\circ} 42' 40''$  N., and longitude  $57^{\circ} 54' 11''$  E. In 1876 the castle was in fair repair. It has no ditch, there are four large flanking towers at the angles, and many pieces of unserviceable iron ordnance stand in front of the gate. The rest of the town, consisting chiefly of mat huts, extends for 3 miles along the shore, in the date plantations which line the coast from near Ras al Ghaf.

The country is well cultivated near the town. This town like Sib, is under a wáli; large quantities of a shell-fish called dok, resembling a cockle, are collected here, dried in the sun, and sent into the interior. There is a large bazaar, and some Banyans are settled here. Supplies can be easily obtained here.

**The Anchorage** is in 5 fathoms, one mile from the shore, sandy bottom. The soundings decrease regularly, the water is clear, and the bottom may be seen in 4 fathoms. Within 3 miles, on a S.W. bearing, irregular soundings between 9 and 5 fathoms have been obtained.

**SUADI ISLANDS.**—Suádi point is low and sandy with a sand-hill; the date-groves do not come within  $1\frac{1}{2}$  miles of the point. Off it lies the group of islands also called Suádi, which consists of one large islet, and six smaller ones, extending  $1\frac{3}{4}$  miles E.S.E. and W.N.W.

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\* "Acacia;" hence the name of this point.

The largest (and eastern) islet 280 feet high, is three-quarters of a mile long, East and West, and a quarter of a mile broad; it is table-topped with a gap in it, has cliffs all round to seaward, and is visible 18 miles. On its west side is a little sandy bay. It is separated from the land by a strait, a quarter of a mile wide, and fordable at low water.

The other islets are all precipitous, from 50 to 150 feet in height; the southern and largest of the six, only one-sixth of a mile long, has a tower on it, built in the pirate times to protect the anchorage; between this (tower islet), the largest islet, and the shore, is a small boat harbour, about half a mile in extent, with 2 fathoms close to the south side of the tower islet where native vessels anchor, partly sheltered from the prevailing winds. This little place is crowded with boats in the date season; the entrance is close round to the south-westward of Tower islet. This anchorage is used as a headquarters for the boats of H.M. squadron on detached duty.

A small vessel might anchor close on the south-east side of the great islet, in 4 fathoms, sheltered from the shamál; but in the winter she would be embayed if a north-easter came on. There is no danger outside these islands, and there are 4 or 5 fathoms quite close-to; the bank of soundings outside them is not more than 9 miles broad.

**Water.**—There is a well of good water on the beach, about a mile to the westward of the Suádi islands.

**DAIMÁNIYAT ISLANDS**, called by Arab seamen Saba Jezáir,\* are all quite barren, and there is no water on any of them. They are frequented by fishermen from the mainland, who come over in small boats called baddan, and catamarans called shásha, made of date-stalks.

The eastern of the three groups, named *Kharába*, consists of one islet, a quarter of a mile in length, with several detached rocks; it has a reef on its north and east sides, extending about half a mile off; and 20 fathoms within a quarter of a mile. Its highest part, about 25 feet high, is visible 8 miles; it has black rocky points, with white sandy beaches between, which might show at night; the other islands, as far as Suádi, can be seen from it, also the coast immediately opposite. The bank of soundings extends about 4 miles outside this island: there are 22 fathoms close inside it, shoaling gradually towards the main. The channel between this and the centre group is 3 miles wide with 20 fathoms and upwards all across, and quite safe.

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\* The seven islands, seven being a favourite indefinite number.

The centre group, called more particularly Daimániyat, extends nearly East and West,  $3\frac{2}{3}$  miles. It consists of seven islets of different sizes, in a row, with some detached rocks. Their height is from 30 to 40 feet, and they are visible 9 miles. There is no danger near this group, which is steep-to, with low cliff, of light brown colour, and difficult to see at night. The western and largest has two little hills with a valley between, and is three-quarters of a mile long by a quarter broad. There are said to be three clear channels through them; there are not more than 14 fathoms between this group and the shore. On the inshore side the soundings are no guide when approaching them. One mile off the north side there are 30 fathoms, and no bottom at about 4 miles off. The channel between this and the western group is  $3\frac{1}{2}$  miles wide, with 20 fathoms in it, and quite clear.

Jezírat-Jún is the name given to the western group. It consists of one islet, and three rocks above water, extending in a straight line East and West  $1\frac{1}{2}$  miles. The large islet (107 feet high, near the west end) is three-quarters of a mile long, and very narrow; it is of light brown colour and difficult to see at night; by day it is visible 12 to 13 miles. The highest part is in latitude  $23^{\circ} 50' 28''$  N., and longitude  $57^{\circ} 58' 33''$  E.

On the south side of Jun great island there is tolerable anchorage in 8 fathoms, sand, opposite a small sandy beach, a quarter of a mile off shore, and sheltered from the prevailing winds, though there would be much swell rolling round the island in a strong breeze. Half a mile south of it is a 6-fathoms bank, with 9 fathoms between it and the island.

Off the western little islet a 2-fathoms spit runs 300 yards in an E.S.E. direction, or nearly towards Jun great islet. The depth inside Jun islands is 14 fathoms at three-quarters of a mile off, decreasing towards the main. Between the sunken patch and Suádi islands there is a clear passage of  $8\frac{1}{2}$  miles, with 14 to 6 fathoms.

At  $4\frac{1}{2}$  miles north of Jun there are 50 fathoms, and 20 fathoms are  $1\frac{1}{2}$  miles off.

**Sunk Rock.**—Nearly  $1\frac{1}{4}$  miles N.W. by W.  $\frac{1}{2}$  W. from the high part of Jun is a detached sunken patch, a quarter of a mile across, least water 9 feet, with masses of coarse coral rock, and 20 fathoms within a quarter of a mile on the north side; there are 18 fathoms between it and Jun, and 14 fathoms a quarter of a mile to the southward. This patch shows plainly from aloft when the sun is behind the vessel.\*

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\* E. I. C. sloop *Olive* grounded on this reef in 1858,

**TIDES.**—It is high water, full and change, at the Daimáníyat islands at 9h. 30m., springs rise 9 to 10 feet.

**ASPECT OF COAST.**—The whole of the coast from Suádi to Khor Kalba is low and sandy, and quite free from danger. It is little visited by Europeans. There are many towns and villages, each one having a fort, more or less in ruins, and the date plantations are almost continuous close to the sea. The coast is not seen at more than 9 or 10 miles off; its general direction alters gradually from East and West to North and South at Khor Kalba.

The great range of mountains appears to be continuous from the Jebel al Akhdhár to the entrance of the Persian gulf; it is visible from the sea the whole distance, and gradually approaches the coast to the northward, leaving only a narrow plain opposite Khor Kalba.

**SOUNDINGS.**—The survey of this part of the coast is very imperfect. The 100-fathoms line is 9 miles from the coast at the Suádi islands, increasing to 18 off Khor Kalba; the soundings appear to be quite regular. Vessels anchoring on this coast should not go into less than 5 fathoms, especially if it be the season for north-westerly winds. Within 5 fathoms the bottom is very uneven, and in places rocky. Landing is generally difficult here.

**Masnaa village**, 9 miles west of Suádi, consists of mud and mat huts, with a fort in its centre, which was of considerable dimensions and strength until destroyed in 1874 by the British squadron. The water off this place is shoaler than at most places on the coast, 3 fathoms being quite one mile off.

**AS SUWAIK**, the first town of any size, is 20 miles W. by N. from Suádi island. A part of the town is walled round, and it has a large fort in the centre, which is conspicuous with three high towers; there are also many huts without the walls. It is under the wáli of Barka, and has a garrison of the sultan. There is a bazaar here. Between this place and Suádi are six villages.

**AL KHADHRA** is a village extending some distance along shore, commencing 3 miles to westward of as Suwaik. It has a fort partly ruinous at the east end.

**AL KHABÚRA** is a town 20 miles to the north-west of as Suwaik. At 25 and 20 miles to the south-west of this place are two hills, which are conspicuous as landmarks; a high bluff, quoin-shaped hill, about 3,000 feet high, and on the lower jagged range an Asses Ears peak. Four or five small villages will be seen between this and as Suwaik, and to the northward between it and Sohár there are eight villages, of which Sâhm is the largest.



**SOHAR.**—This large town, 67 miles from Suádi, is under a wáli and contains 4,000 or 5,000 inhabitants. A conical peak, 1,550 feet high,  $12\frac{1}{2}$  miles W. by S.  $\frac{3}{4}$  S. of the town, is a good mark for finding it. The peak is of light colour, and stands in the plain some distance in front of the back range of mountains; by its bearing, it would indicate the whereabouts of the town long before the low shore was in sight. The town is walled, with a high fort in the middle, the residence of the shaikh, which is seen after all the date trees are below the horizon, or about 12 miles. There is a moat round the town, and a large bazaar. Many mat huts are built along the beach, in the date-groves outside the walls. In the fort are several large round trees. The S.E. tower is in latitude  $24^{\circ} 21' 50''$  N., and longitude  $56^{\circ} 45' 40''$ .

The soundings are regular in about 7 fathoms between this and Barka; the water is shoaler near Masnaa than off Barka.

The anchorage is in a convenient depth abreast the town. There are 5 fathoms, sand, one mile off. The date-groves are quite continuous on this part of the coast.

**SHINÁS** is a considerable town, 27 miles to the north-west of Sohár. The fort is a large one, and from the south-east shows a long front, it has three towers, two at its south end, and one at the north end, which is much higher and larger than the others. It shows well, except from the northward against the trees behind it.\* There are six villages between it and Sohár, of which the largest is Majís, where there is a manufactory of the cotton canvas used by native craft.

When seen, Sohár peak is a good guide for finding this place. This peak when seen to the southward of S.W. changes its appearance, becoming more triangular; it is visible when off Khor Kalba, and makes then like a light brown triangular island. A Khor extends along the front of the fort and town; the entrance about  $1\frac{1}{2}$  miles north from the town, may be known by a small sand-hill on the beach a little to the north of it, and the break in the date trees.

Anchor in 5 fathoms, a little to the northward of the port, to be off the entrance to the khor, as boats must enter it to land. The water shoals gradually, and the soundings are regular.

**Khor Kalba**, a village and fort with about 200 men, 19 miles to northward of Shinás; there is a creek into which boats go at high water; South 5 miles from this, near a village called Mureir, the Bátina coast ends. There are three small villages between this latter place and Shinás.

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\* The British force against the pirates, in 1809, took this fort by assault, after a determined resistance.

The **COAST** from Mureir to Dibba is called Ash Shameiliya; this part of the coast is at present under the government of the Jowásim chief. The plain becomes narrower, and 15 miles north of Khor Kalba the hills come close down to the sea. The general direction of the coast is N.  $\frac{1}{2}$  E. 35 miles to Ras Dibba; from thence it trends West about 5 miles to the town of Dibba; the mountains are high close to the sea; the coast line, cliffs with sandy bays, in which are villages and date-groves.

**SOUNDINGS.**—There is no danger off this part of the coast, the depth being 30 fathoms 2 to 4 miles off, shoaling regularly but quickly towards the land. The 100-fathoms line from opposite Khor Kalba runs across to Ras al Kuh (on the Persian coast), and to the northward of this line the soundings are all under that depth; 50 fathoms being 9 miles off shore at Khor Kalba, and probably only 5 miles at Ras Dibba.

**AL FUJAIRA**, a town 6 miles North of Khor Kalba, with about 500 men; hence it is  $2\frac{1}{2}$  days' journey across the mountains to Shárja.

The anchorage in 5 fathoms is about three-quarters of a mile off the beach. At the landing place called Gherefá, there is a large square stone house and several huts. Fujaira is  $1\frac{1}{2}$  miles inland and consists of an Arab fort, surrounded by huts. Supplies can be obtained, and there is plenty of water.

Half-way from this to Khor Kalba is Ghálat Kalba, a large village, with a dilapidated Arab fort, and 200 to 300 men. Three miles North of al Fujaira is Sakamkam, a small village, with about 50 men.

A little north of Sakamkam is a steep, rocky, black point, between which and Khor Fakán is a plain dotted over with black hillocks varying in height, resembling gigantic mole-hills.

**KHOR FAKAN**, a village with a large date grove, in a sandy bay, 15 miles South of Ras Dibba. The islet is in latitude  $25^{\circ} 21' 13''$  N., and longitude  $56^{\circ} 23' 00''$  E. The east side of this bay is formed by a projecting mass of hills, 1,000 to 2,000 feet high. There is a peaked islet 240 feet high, off the N.E. point, with a deep water channel 2 cables wide, inside it; but from the eastward it is not easily distinguished from the land behind.\*

The soundings in the bay decrease regularly from 9 fathoms at the entrance. The bay is  $1\frac{1}{2}$  miles across to the north rocky point, called Ras Lulíya. The anchorage in 6 fathoms, sand, half a mile from the village, is open to the nashi. On the east side, just outside

\* See plan of Khor Fakán on Admiralty chart, Persian gulf, No. 2837a.; also Admiralty chart, Persian gulf entrance, No. 753; scale,  $m = 0.2$  of an inch.

a point of cliff with two towers on it, is a little cove  $1\frac{1}{2}$  cables deep, with a sandy beach at the bottom, and 3 fathoms in the entrance, where small boats anchor, quite sheltered from all winds.

There are about 150 men here; excellent water can be procured with little delay, also supplies of cattle, poultry, vegetables, &c. Fish (rock cod, &c.) is plentiful. Firewood could be obtained on giving 2 or 3 days' notice, to give time to bring it in from the country.

Above Ras Lulíya the shore is low and sandy for several miles with date-groves and villages, the mountains being at a short distance from the shore. Zubára is a small village  $1\frac{3}{4}$  miles North of this point.

Al Badi is a small islet about 200 feet high, lying close to the shore,  $4\frac{1}{2}$  miles North of Khor Fakán, and there is a village of the same name a little above it.

Between this place and Ras Dibba are the villages Karam, Zadna, and Ruwul Zadna. The shore is formed of rocky points and sandy bays, the mountains rising abruptly a short distance from the coast.

**DIBBA BAY.**—Ras Dibba is a projecting point of cliffs of moderate height, having a small islet a quarter of a mile off, with a channel of 2 to 3 fathoms behind it. In the bay, one mile to the westward, is a white patch\* on the cliffs.

Dibba bay is five miles across, and open from N.N.E. to east; the soundings decrease regularly from 15 fathoms to the sandy beach. The town and fort are 5 miles W. by N. of Ras Dibba, and contain about 2,000 men; there are very extensive date plantations in the valley on the south of the town. Good water may be obtained here, and supplies of cattle, vegetables, &c.

**DIBBA to the QUOINS.** (Saláma wa Benátaha.)—The country north of a line drawn from Dibba to Ras al Khaima, forms a great promontory, called Ruús al Jebál (capes of mountains). It is under the Maskat government as far as Khasab, thence to Ras al Khaima under the chief of the latter place. The inhabitants of this district are chiefly of the Shihiyyín tribe, who are extremely poor, in-offensive, and are herdsmen or fishermen; during the date harvest they are absent from their homes, being employed either in Bátina or Khasab, &c. So secure do they feel from intrusion on their secluded homes, that during their absence, everything is left by them in their huts (as nets, &c.) until their return.

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\* Captain Brucks' Memoir.

They are of course very ignorant and superstitious ; dates or rice are the most acceptable presents, some of them hardly appeared to know the use of money. They speak a very corrupt dialect of Arabic, and are able to make their voices heard at considerable distances among the mountains, or across the coves.

Their huts are built of loose stones, with flat roofs, not over 6 feet high, the floor being often sunk in the ground 2 or 3 feet. They are frequently built by the sides of the hills, where the children may be seen tied by the leg, to prevent their falling over the cliffs.

From Ras Dibba, the north point of Musandam island bears N. by E. 47 miles. This is also the general line of direction of the coast, but the coast line of this (as of the other) side of the promontory is singularly indented into numerous deep-water inlets, some of great extent. In all these coves the winds are very baffling, and in consequence a sailing vessel would find it difficult to enter or leave them ; the depth of water in most of them is a further difficulty, rendering it tedious to attempt warping. The larger Arab vessels never visit these coves, nor any native vessel not propelled by oars ; if a ship should happen to enter one, the best time to get out would be at night, when a light land wind often blows out of the inlets. Steam-vessels may safely enter any of the coves.

The coast is throughout precipitous, and the cliffs generally overhang near the sea level, being undercut by the action of the water ; there are small sandy bays at the mouths of the valleys, and the mountains rise abruptly from the water's edge. The whole of the shores are quite barren, except in a few little valleys where date-groves, &c. are found ; the mountains are apparently entirely of bare rock, presenting a grand and wild appearance. There is, however, much scanty vegetation on these hills, growing in fissures, &c. on which the goats feed. The inlets, enclosed by these bare precipitous mountains, have a most romantic appearance ; among the mountains are many wolves, leopards, hyænas, and foxes. The paths across these mountains are generally tracks fit only for goats or Arabs.

Seen from the eastward, the range of mountains has two principal peaks, of which the northern, called Jebel al Harim, 6,750 feet high, is the highest ; it is a peak with a truncated or small table top, with a little notch on the south part. The other, Jebel Kawa, 5,800 feet high, is a grand peak, with a small notch in the top ; these are visible 80 or 90 miles, or from Jāshak on the east, to Linja on the west side.

**SOUNDINGS.**—There is no hidden danger off this part of the coast : 40 fathoms are about a mile off shore below the islet Umm al Faiyarín, and 60 to 65 fathoms, or the deepest water in this part of

the gulf, 10 miles off. Above that islet the deepest water, viz., 70 fathoms, is close to the points, and just off Musandam island, 80 and even 100 fathoms are found: the water shoaling to 50 and 40 fathoms half-way across to the Persian coast.

**Ras Suwat** is a rocky point 5 miles N.N.E. of the town of Dibba, and forming the north point of the bay. From this point to Ras Musandam the mountains rise quite close to the sea. About one mile North of Dibba is a village called al Karsha, with about 50 men.

**RAS HAFFA** is the south point of a promontory forming the east side of the cove of the same name: the promontory is moderately high, and decreases in height towards the south point. It is  $1\frac{3}{4}$  miles from Ras Suwat, and between them is the entrance to the cove, the soundings in the entrance being 10 to 12 fathoms.

**Dúhat Haffa** is a cove running in parallel to the coast for  $2\frac{1}{2}$  miles, and varying from half to a quarter of a mile in width; the soundings in it are 7 to 8 fathoms, and quite regular. The strip of land (averaging a quarter mile in width) forming its eastern side, and terminating in Ras Haffa, quite masks this cove from seaward, so that a stranger would not suspect its existence: it forms a land-locked harbour. There are only a few fishermen here. It is only 20 miles in a straight line from this across to Ras al Khaima.

**Khor Mala**, a small cove  $3\frac{1}{2}$  miles to northward of Ras Haffa; the intermediate coast is a line of cliffs, with soundings of 20 fathoms at about a quarter of a mile off. The cove is three-quarters of a mile deep, with soundings decreasing from 8 fathoms at the entrance.

**Dúhat Sharja** is an indentation 8 miles north of Ras Haffa, nearly  $1\frac{1}{4}$  miles deep by three-quarters wide. There are 20 fathoms at the entrance, shoaling gradually towards the sandy beach at the head: it is open to easterly winds.

Close to the southward of this cove, and separated from it by a promontory three-quarters of a mile wide, is another cove a mile deep, opening out at its inner end to half a mile in width; the soundings are 12 fathoms in the entrance, and decrease regularly. There is a small village and date-grove at the head, on the south side. There are several other small indentations between this and Khor Mala.

The coast runs in a N.N.E. direction for 3 miles above Dúhat Sharja to Ras Hamra, and then falls back, forming the south point of Kubbat Akaba. It is quite precipitous, with a peak (about 2,000 feet) rising near the shore, which, when viewed from the northward, forms a fine cone; it is called Líma peak. Behind it is a saddle mountain,

somewhat higher, also conspicuous from the north. From the eastward these two hills do not show against the higher land behind.

**RAS LÍMA**, 285 feet high, is a narrow, precipitous point, 27 miles S.  $\frac{3}{4}$  W. of Ras Musandam, projecting one mile from the line of coast. Off it lies a precipitous island, 285 feet high, called Jezírat LÍma, a third of a mile long; with a channel,  $3\frac{1}{2}$  cables wide, between it and the point. There are 20 fathoms in this channel, and a small detached rock near the island; the tide sets strong through it. There are 30 fathoms close to outside the island.

At  $1\frac{1}{2}$  miles to the S.W. of Ras LÍma is a point called Ras Samút, which forms the north point of Kubbat Akaba, 2 miles broad and  $1\frac{1}{2}$  miles deep, with soundings in it decreasing regularly from 20 fathoms. In its north-west corner, at the mouth of the valley, is a small village called Akaba,\* with 80 or 90 men, whence there is a short way by land through the hills to LÍma. Close in to the village boats find shelter from the north-easters, which are the worst winds on the coast.

**LÍma.**—To the northward of Ras LÍma is a sandy bay, a mile in extent, at the mouth of a valley, in which is the village of LÍma, containing about 200 men. The village is on the south side of the bay, and part of it is built up the hill, on the steps of the strata, one hut above the other; there is a date-grove and some cultivation in the valley.

The mountains inshore of this part rise suddenly to great heights. At the north end of LÍma sandy bay is a high, precipitous hill, with four rocky islets, 10 to 30 feet high, off the centre of three little points formed by it.

**Supplies.**—Cattle, &c., are procurable here; good water not obtainable in any quantity, except perhaps from a distance. Firewood could be got by waiting a day or two. The people here said they could cross over to Ras al Khaima in one day; and that there were ponds of fresh water in the mountains, distant half a day's journey.

**The anchorage**, open from East to N.E., is in 11 to 12 fathoms. The best landing place in easterly winds is on the south side of the bay, close to the cliffs, in a little bight used by the native boats.

**The coast** from LÍma runs North for 5 miles to the south entrance point of Dúhat Kabal, a high cliff called Ras Samíd: the coast south of Ras Samíd for  $2\frac{1}{4}$  miles has a series of small points and bays to

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\* Called also LÍma Kedíma (Old LÍma).

Ras Marovi, off which are two small rocky islets 20 to 30 feet high ; and at  $1\frac{3}{4}$  miles south of Ras Samíd, a rock 25 feet high lies nearly half a mile off shore, with 22 fathoms inside it.

South of Ras Marovi is a bay upwards of a mile across, with a patch of sandy beach.

**DÚHAT KABAL**, a fine cove, a mile broad at the entrance, running in 2 miles West, and then turning to the South for another mile, with a sandy beach at the head. Its shore is very indented, with little beaches in the bays ; the points all cliffs. Close on the south-west side the mountains rise like a wall, forming a tremendous bluff, over 4,000 feet high. The soundings decrease from 28 fathoms at the entrance to 13 fathoms at the bend, and thence regularly to the head.

This cove is frequented by fishermen from Líma, and a few poor herdsmen live in huts scattered over the valley at the head. In the western branch of this valley, or watercourse, are also the ruins of an extensive village, the walls built of large slabs of stone,\* without mortar. There is a little barn hill on the summit of the lofty cliffs forming the north entrance of the cove, and hence the cliffs run N.E. by N. 3 miles in an unbroken line, of irregular height and deeply furrowed, decreasing in height to the northward, and terminating at Ras Sarkán.

**RAS SARKÁN**, a perpendicular cliff several hundred feet high, forms the south entrance point of Kubbat Ghazíra. There are 40 fathoms within half a mile of this point.

**KUBBAT GHAZÍRA**† is an arm of the sea, nearly 3 miles wide at entrance, between Ras Sarkán and Ras Dilla, and  $8\frac{1}{2}$  miles long in a W.N.W. direction. Its shores are throughout precipitous and high, except in a few little sandy bays at the bottom of valleys, and are deeply indented into numerous small inlets and coves ; the length of its coast line being about 40 miles. The soundings are everywhere deep, 36 to 30 fathoms in the main inlet, and 25 to 20 in the smaller coves, 20 fathoms even being close to the cliffs ; the bottom chiefly mud and rocky at the entrance. There are two principal branches on the south side, the outer  $1\frac{3}{4}$ , and the inner nearly  $2\frac{1}{2}$  miles deep, both running in a S.S.W. direction ; in the former is a hamlet.

In a small bay at the bottom of the inlet is a village called Habalain. On the north side are also two large coves, each 3 miles

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\* Some of the blocks measure 8 to 9 feet in length.

† Or the "deep inlet."

deep, separated by a high and rugged peninsula. In the inner one is a hamlet called Mukáka, and the north side of this cove is separated from Khor ash Shem (on the other side of Ras Musandam), by a ridge from one-third of a mile to a mile wide. At the bottom of the outer one is the village of Fílam, built on an isthmus only 100 yards in width, separating this cove from Kubbat Shabús.

**Tide.**—It is high water in the inlet at full and change, at 10h.; springs rise 10 feet.

**RAS DILLA**, 200 to 300 feet high, the eastern point of the high peninsula commencing at Fílam village, is a perpendicular cliff, having a conical summit. The peninsula is 5 miles long, and has a remarkable brown coloured peak, over 1,000 feet high, with a little round knob on the top, on its widest part. It separates the inlets Ghazíra and Shabús. The soundings off it irregular, 30 to 45 fathoms.

**KUBBAT-SHABÚS** is 3 miles wide at the entrance, and runs in a westerly direction for  $2\frac{1}{2}$  miles, then turns to the northward for 2 miles. The soundings in it are from 35 fathoms in the centre to 20 or 30 fathoms close to the sides. The shores are high cliffs, with little sandy beaches in places. The village of Shabús is in a little bay on the south-west side. In the northern part are two hamlets. On the land between the head of this cove, Kubbat Ghazíra, and Dúhat Shísa is a remarkable conical mountain, 3,000 feet high, with a flat scalloped top, called Jebel Síbi. This cove is separated from Dúhat Shísa by a high peninsula 4 miles long North and South, at the narrowest part of which the two inlets are only one mile apart. There is a high conical hill on it, over 1,000 feet high, of light colour, which was called Kaisa peak.

The south point of the peninsula forming the north entrance point of Shabús inlet, called Ras Báshin, is about 100 feet high, and of light red colour. The easternmost point, forming the south entrance point of Dúhat Shísa, is called Ras Kaisa, and is similar to the last; a small islet lies  $1\frac{1}{2}$  cables off it. There is another similar islet 2 miles below this point, and one mile from Ras Báshin. The Arabs say there is a small reef near the shore, not far from this islet, called Abu al Mawár, with one fathom on it. The soundings off these points are 30 fathoms, close-to, and 70 about a mile off.

**JEZÍRAT UMM AL FAIYARÍN** (anglicé, Rat island), is a rocky islet S.E.  $\frac{1}{2}$  S.,  $4\frac{1}{2}$  miles from Ras Kaisa, and  $3\frac{3}{4}$  miles off the nearest part of the land; it is 360 feet high, one-third of a mile long, and visible 22 miles off. It is of light colour, precipitous on the



west, and barely accessible on the south-east side. The soundings near it are 60 fathoms on the east side, and 40 to 45 between it and the shore.

**CAUTION.**—The tides are very strong near this islet; and from this, round Ras Musandam and the Quoins, so strong, with eddies and races, especially near the cape, as to render it undesirable for a sailing vessel to approach the coast unless obliged; particularly as the wind is very uncertain near the high land, often dying away, or coming suddenly from the opposite quarter. The tide runs north and south along the coast to Ras Musandam, where it sets to the north-west towards the Quoins, and east and west towards Ras Sharíta.

**RAS KABR HINDI** (Indian's grave), about 1,200 feet high is quite precipitous, with three scallops on the top; there are 60 fathoms half a mile off. Between it and Ras Kaisa is the entrance to Dúhat Shísa. This is the easternmost point of the Ruús al Jebál, and only 30 miles distant from the Persian coast East of it.

**DÚHAT SHISA**, a fine bay 6 miles deep East and West, and  $4\frac{1}{2}$  miles wide at entrance, has 30 to 40 fathoms all over it, and 15 to 20 fathoms close to the cliffs. Its coast line is precipitous and irregular with some little sandy beaches in the coves. There are three islets half-way in on the north side, the largest of which, about 100 feet high, is a quarter of a mile long, and called Red islet from its colour. The village of Shísa, with about 200 inhabitants, stands in a cove on the west side or bottom of the inlet.

The west side of this cove is separated from Khor ash Shem by a ridge, in one part about three-quarters of a mile wide. Two and a half miles inside the north entrance point the ridge connecting Ras Kabr Hindi with the main is only about 100 yards across, and has a rough wall built across it.

**MUSANDAM ISLAND**, 875 feet high, is of triangular shape, and precipitous all round, excepting 3 or 4 small coves on the east side, the only landing-places. The highest part is near the south face, and has three little peaks. The island is nearly 2 miles long North and South, and  $1\frac{1}{2}$  miles broad at the south end. There are some remains of buildings on the northern part, built of large blocks of stone without mortar. There are generally a few herdsmen here, with flocks of goats; the whole of the coasts about this part are frequented by fishermen from Kumzár. The north point of the island is a cliff about 100 feet high, and is generally called Ras Musandam. It is in Lat.  $26^{\circ} 24' 13''$  N., and Long.  $56^{\circ} 31' 35''$  E. The soundings

are 100 fathoms close to the northward and eastward of this cape, being the only spot north of Ras al Kuh where such a depth is obtained.

*a* **KACHAL**,\* 100 feet high, is a little islet or pillar of rock, half a mile N.N.E. of Ras Musandam, with a clear passage between them, and as deep water as at Musandam.

**Tides.**—Near this islet the tides are at the strongest, with broken water ; the noise of the races at springs may be heard some distance in calms. See pages 20, 41, and 81.

**The STRAIT.**—Musandam is separated from the main by a strait called by the natives the Bab, or Fakk al Asad, *i.e.*, the Lion's jaw, 3 cables wide, and quite clear, with 24 fathoms in it. The point of the main opposite, called Ras al Bab, is about 3 miles N.N.W. of Ras Kabr Hindi, with a deep bay between ; it is a perpendicular cliff, about 200 feet high. This and the whole of the islets about the cape are, at the projecting points, undermined by the action of the tides, some places for yards in the solid limestone rock, of which they are all composed.

This channel has frequently been used by steamers ; but great attention must be paid to the steerage, and to keep as near mid-channel as possible. Owing to the strong tides and baffling winds, it is not safe for sailing vessels. The Arabs only venture through in rowing boats. The stream of flood sets against the cliffs on the west side of the strait, and the ebb the reverse.

**SALÁMA WA BENÁTAHA**,† named by English sailors The Quoins, is a group of three remarkable islets, the largest of which, called the great Quoin or Saláma, 540 feet high, bears N.  $\frac{1}{2}$  W. 7 miles from Ras Musandam, and is visible in clear weather 27 miles. It is wedge or quoin-shaped, the perpendicular face to the south-east, and is 800 yards across, and accessible only on its north-west side ; there is a small detached fragment about 80 yards off its north side. The highest point of Saláma is in Lat.  $26^{\circ} 30' 3''$  N., and Long.  $56^{\circ} 30' 42''$  E. From it the highest part of the Little Quoin bears S.E.  $\frac{1}{2}$  S. 2 miles ; and the peak of Gap island E. by S.  $\frac{1}{4}$  S. three-quarters of a mile.

The Little Quoin, 168 feet high, is also quoin-shaped, but has a more gentle slope on top than the Great Quoin ; the highest bluff is to the south. It is accessible on the north side only, off which a small spit runs in the direction of Gap island.

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\* By the fishermen called also Chukiyát.

† Saláma (a Musulmán saint) and her daughters.

Gap island, a name given to the centre islet, has a peak near the centre, about 250 feet high, and cliffs all round. The soundings are 45 to 50 fathoms close to Saláma, and 70 to 80 to the southward of the Little Quoin, increasing towards Musandam island.

The tide sets N.W. and S.E. about the Quoins, 3 knots or more at springs. It is recommended to sailing vessels not to pass to the southward of them ; the wind is often lost near them, and the tide races will turn a vessel half round against the helm.

## CHAPTER IV.

SOUTH SIDE OF PERSIAN GULF.—COAST OF OMÁN;  
QUOINS TO ABU THABI.

VARIATION 0.15 West in 1890.

**RAS MUSANDAM to RAS al KHAIMA.**—This part forms the north and west sides of the Ruús al Jebál. The mountains rise close to the sea, as far as Shuam, 13 miles N.N.E.  $\frac{1}{2}$  E. from Ras al Khaima, when they begin to recede from the coast, and the low shore commences, which is characteristic of the whole of the rest of the Arabian coast of the gulf. The sea is everywhere beautifully clear.\*

From the northward, except when quite close in, Jebel al Harím is conspicuous over all the other hills, still appearing with a small table top, and to the right of it the peak, named by us Fine peak, 4,470 feet high, which is a very regular cone on all views, and shows well, except when against the higher mountains behind, and bearing S. by E. to S.E.

**TAWAKKUL,**† 460 feet high, is a precipitous islet, nearly the size of, and of similar appearance to, Saláma or Great Quoin. The depths are 60 to 80 fathoms at a quarter of a mile off.

**DANGER.**—Three-quarters of a mile West of this islet is a small rocky patch, 50 yards across, with only 9 feet on it, and 50 to 60 fathoms close-to. When on the patch, Mushkán rocks are on with south end of Perforated rock (off Ras Sharíta); and the west end of Kun island is on with the round hill over Kumzár. Kachal islet one point open of south side of Tawakkul, and open northward of that island, leads clear to the south and north of the shoal respectively. It often has a flock of small birds hovering over it.

**JEZIRAT KUN**‡ is a precipitous island, near 600 feet high, about a mile long East and West, with a depression in the centre forming a kind of saddle. Its west and higher peak is 4 miles W. by S. from Ras Musandam.

\* See Admiralty chart, Entrance of the Persian gulf, No. 753; scale,  $m = 0.2$  of an inch; also Persian gulf, No. 2,837a; scale,  $m = 0.03$  of an inch.

† The fishermen call this island Suwaik, and the shoal next described Rak Suwaik.

‡ Called also Al Khail by the fishermen.

**JEZÍRAT ABU SIR**,\* lying off a projecting promontory called Ras Mukhálif, is 6 cables long North and South, and has 40 fathoms close-to on the north side. It has cliffs all round, and near the south end a peaked hill about 400 feet high, sloping down to the north end. It is separated from the main by a strait called Bab Mukhálif, a quarter of a mile broad, with 35 fathoms, sand and rock in it, through which the tides set very strong with eddies; near mid-channel is a high precipitous rock. The north point of this island bears nearly West,  $5\frac{3}{4}$  miles from Ras Musandam.

The **MUSHKÁN** are several detached rocks or islets close together 15 feet above the sea, and of white colour, lying N.N.W. of Abu Sir, with a clear passage 6 cables wide, with 20 to 25 fathoms in it, between them and that island. There are 70 fathoms a mile to the northward of them.

**KUMZÁR**.—To the eastward of Ras Mukhálif, the coast runs about S.S.W., forming a cove upwards of a mile deep, and three-quarters wide, at the bottom of which is the town of Kumzár. It contains about 500 men, and is built in a gloomy valley or gorge in the mountains; water is obtained from a deep well, some distance up the watercourse. There is a low wall across the beach, in front of the town, which is chiefly built of the naturally-squared blocks of limestone detached from the mountains. The inhabitants are fishermen, and have 50 or 60 boats of different sizes; they take salt fish, shark-fins, &c., for barter to Kishm, with which place they have much intercourse.

The cove is open to the nashi, which often blows strong in winter. The soundings decrease regularly from 35 fathoms at the entrance, with sandy bottom; a vessel would have to anchor in 18 to 20 fathoms.

Between Kumzár cove and Ras al Bab, the point opposite Musandam island, the coast is very irregular; several bays being formed by projecting points of land, all having deep water. The largest of these lies to the south-east of Kun island; the entrance is a mile wide, between two singular narrow projecting strips of cliff; the bay is in one part separated by a ridge, only about 100 yards across, from Dúhat Shísa: it is precipitous all round. The next bay, south of Kun, has a few huts on a sandy beach at the bottom, and over it is a remarkable sharp peak on the mountains called Jebel Maíli, 1,894 feet high, which slightly overhangs to the east, when

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\* Called Abu Rashid by Captain Guy.

viewed from the northward; at the back of Kumzár is a round-topped mountain, rather higher than Maíli.

**RAS SHARÍTA** is the north point of a low promontory  $1\frac{1}{4}$  miles long, and in some parts only 100 yards wide; the highest part may be 200 or 300 feet high, and it is precipitous all round. Off it, and bearing West, a little northerly, 8 miles from Ras Musandam, is a little islet, about 40 feet high, with perpendicular sides, and a hole through it; whence it has been called Perforated rock. The strait or Bab, between this islet and the point is only a cable wide, and hardly fit even for boats, owing to the strength of the tides. There are 60 to 70 fathoms within a mile to the northward of this islet, and 30 to 35 between it and the Mushkán rocks.

Between this point and Ras Mukhálif are three coves, each nearly a mile long North and South, with deep water, exposed to northerly winds, and with 20 fathoms in the entrance. In the easternmost is a small nook at the head forming a boat harbour, and a few huts with a well of water.

**JEZÍRAT AL GHANAM.**—From Ras Sharíta the coast runs about South for 4 miles, and off it lies this island, which is  $2\frac{1}{4}$  miles long, North and South, by three-quarters broad, its north end bearing S.W.  $1\frac{1}{2}$  miles from Perforated rock. It has cliffs nearly all round; the north point is low, but it rises gradually towards the south end, where the hill is about 600 feet high, and of conical form, rising over cliffs about 200 feet high. There are 45 to 40 fathoms half a mile off its seaward side. The island is barren, without water or inhabitants; but goats are kept here belonging to the Kumzár people.

**KHOR KAWI**, the strait between al Ghanam and the main, is only one third of a mile wide at either end, widening to half a mile within, with soundings from 15 to 19 fathoms, sand and rock. At the north end, a low level point of rock, like a pier, projects from the island to the eastward, and in the bay on the south side of this point, a small reef extends about a cable from the shore. The tides set strong through the strait, and to the W.S.W. across the entrance. A vessel wishing to enter this strait for shelter, &c., should do so from the northern end, and, bearing in mind the set of the tide across the entrance, round the low north-east point of the island, anchoring immediately after passing it, in 15 to 17 fathoms, well over on the west side, close to the little reef mentioned above.

The Great Quoin is seen from this anchorage, over the low isthmus connecting the promontory of Ras Sharíta with the main. It is not recommended as a place of shelter for sailing vessels, unless obliged,

as there would be probably difficulty in getting out again. For steam vessels it is a safe anchorage. It would be far preferable to cross the Gulf to Hanjám or Kishm anchorage; or, in a shamál, if possible, to fetch into Khasab bay.

On the main, opposite the south side of Ghanam island, is a little cove called Ghárum, a quarter of a mile deep, at the mouth of a valley, with date plantations and some huts on the hills behind. Between the south point of the island, and the headland forming the north point of Khor Ghub Ali, is a bay a mile wide, with 33 fathoms at the entrance; it extends  $1\frac{1}{2}$  miles East and West, and in it, opposite the valley of Ghárum, is another bight, with a little village, called Kabba, at its head.

**KHOR GHUB ALI** runs in nearly straight  $3\frac{1}{2}$  miles to the S.E., with an average width of three-quarters of a mile. On a sandy beach at the bottom is the small village of the same name, with a few date and other trees, and good water. The soundings are 28 fathoms in, and 30 off the entrance, and 16 fathoms at one mile from the head of the cove. The sides of the cove are high cliffs; that at the north entrance point is about 300 feet high, with a conical hill on the summit sloping on all sides down to the cliffs, forming a headland a mile in width, and about 800 feet high. The bottom of this cove is less than a mile from Dúhat Shísa.

The cliff at the south entrance point of Khor Ghub Ali is about as high as that on the north side; hence the coast runs S. by W. 4 miles, to the entrance of Khor ash Shem, forming the west side of a remarkable triangular peninsula, which has Khor Ghub Ali on the north-east, and Khor ash Shem on the south-east side: the isthmus connecting it with the main at the village of Ghub Ali (and consequently separating the two coves) is only about a quarter of a mile wide. The line of cliffs of which it is composed is somewhat indented, and half way, in the largest of these bays, there is a hamlet on a sandy beach called Hassa.

**KHOR ASH SHEM** is an extensive and winding inlet, above 8 miles in length, its breadth in parts being under half a mile; the coast-line is deeply indented, and there are several islands in it. Its western entrance point, a cliff about 150 feet high, called Ras Shahath, is 4 miles S.E. by E.  $\frac{1}{2}$  E. from Ras ash Shaikh; at one-third of a mile N. by W. of it is a  $4\frac{1}{2}$ -fathoms patch. Half a mile S.S.E. of Ras Shahath is another promontory, with al Jibba islet, 100 feet high, close off it; and between these two points is a cove a mile deep, having 16 fathoms in the entrance, with a few huts at the bottom, and good water.

At al Jibba, the entrance to Khor ash Shem is only half a mile wide, with 15 fathoms water ; and from a little distance the entrance of this large inlet is hardly discernible. The khor winds round the south side of the triangular peninsula before mentioned, altering its direction from South to N.W. Jebel Shem, a remarkable peak, 3,000 feet high, having a great precipice on the south-east side, stands near the south point of this peninsula.

On the north side of the inlet, 4 miles within the entrance, and immediately under this peak, is the little village of Shem, with wells of brackish water ; and abreast it, close to the south shore of the inlet is Shem island, reducing the width of the channel to half a mile ; the depth being 17 fathoms in this part of the inlet. At one-third of a mile S. by W. of Shem island is a small islet 50 feet high, on which are the ruins of the telegraph station\*, and 200 yards N.W.  $\frac{1}{2}$  N. of this islet is a pinnacle rock with  $7\frac{1}{2}$  feet at low water springs. At 2 miles above Shem is a narrow point projecting three-quarters of a mile from the north side, called Ras al Hatam, about 50 feet high at the south end, and rising gradually to the north ; to the eastward of which is the hamlet of Máda, with wells of good water, said to be the best in the inlet.

At one mile east of Ras al Hatam is an island on the north side, half a mile long, called Síbi, the passage south of which is three-quarters of a mile wide, with 17 fathoms water in it ; there is no channel to the northward of it. The village of the same name lies  $2\frac{1}{2}$  miles E. by S. from Ras al Hatam, on a sandy beach, at the bottom of a deep cove in the easternmost extremity of the inlet, with 10 fathoms at a quarter of a mile from the beach and 4 fathoms at 100 yards. There are two irregular bays between this place and Máda. Síbi is the largest village in the inlet ; it contains a deep well of water which is said to be brackish after a drought, and a water tank or reservoir, also the ruins of other tanks, and many graves. It is built at the mouth of a great gorge in the mountains, and from it a very rugged footpath leads over to Dúhat Shabús, less than a mile distant. This village lies close on the south-west side of Jebel Síbi, described with the other side of the peninsula, which mountain forms a conspicuous object all over this inlet ; and also appears from seaward to be at the head of Ghub Ali cove, when that cove is open, on which bearing it makes with a sugarloaf top.

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\* Established here from 1864 to 1869, the Persian gulf telegraph cable being at that time laid up at Kubbat Ghazira, across the isthmus and out through this inlet. It was abandoned owing to the heat, which was unendurable.



The south side of the inlet from Síbi to Shem island is quite barren, with many little points and bights. Beyond Telegraph islet is a bay 1 mile in length and breadth, with high steep hills on its south-west side, called Maklab. The south side of the inlet, thence as far as Síbi, is 200 to 500 feet high. Separated from the west side of Maklab bay by a high rocky point, is a sandy bight, with a village in it called Kána. Half way between this village and al Jibba islet is the entrance to a little land-locked cove, with a depth decreasing from 10 fathoms, which would be a convenient place for laying a vessel aground. On the west side of its entrance is a small village called Nazífi.

There is no danger in the inlet except the  $7\frac{1}{2}$ -feet rock near Telegraph islet; a sailing vessel would have great difficulty in getting in or out; but a steamer can with the greatest ease run up the inlet, passing Shem island on the north and Síbi on the south side, passing all the points as near as convenient. The tides are strong in the entrance at springs.

**TIDES.**—In the inlet it is high water, full and change, at 10h. 45m.; springs rise  $8\frac{1}{2}$  feet.

**KHASAB BAY.**—Khasab town stands on a sandy beach nearly a mile in extent, in a bay  $3\frac{1}{2}$  miles S.S.E.  $\frac{1}{2}$  E. from Ras ash Shaikh, and separated from Káda cove by a steep ridge of hills.

The town lies in a date-grove, in which the houses are much scattered, extending a considerable way up the wide valley terminating in this bay. Little is seen from the sea, except a fort near the centre of the grove, and two towers on the beach. The fort contains the shaikh's house, and is much out of repair. The shaikh is a wáli or deputy of the Sultan of Maskat, who gets an annual revenue from the place. There is a small square tower on the western rocky point overlooking the bay. Population of the valley about 600 men. At the back of the date-grove the valley is well cultivated with corn, vegetables, &c.; and the bare steep hills rising on either side have a very picturesque effect. Fresh water in good wells plentiful, and used to irrigate the plantations; the best well is close to the hills on the east side, and about 400 yards from the beach.

**Supplies** of good water, wood, cattle, and vegetables, &c., could be easily obtained; a cloth for wearing apparel, much used by the Arabs, is exported.

There is a projecting high rocky point on the east side of the town, between which and Ras Shahath, which is about one mile distant, are several little bights, the largest with a little village called Fanakha, with good water in wells.

The soundings in Khasab bay are 20 to 22 fathoms in a line about East of Ras ash Shaikh, and decrease regularly; bottom sand and rock. It is a good place for shelter in a shamál, which here blows W.S.W. to S.W.; when a vessel might run in and anchor with Ras ash Shaikh N.W. by W. about  $1\frac{1}{2}$  miles, in 17 or 18 fathoms without going quite in to the anchorage off the town. The soundings decrease regularly but quickly below 10 fathoms.

The soundings off the town are 8 fathoms in the mouth, and 2 fathoms at one-third of a mile from the beach, which dries off a quarter of a mile in ridges at low water, rendering landing at that time unpleasant. The best landing is on the west end of the beach, and boats should keep close along the west shore.

The anchorage is sheltered from the prevailing winds, and the holding ground good, being fine sand; in winter only, northerly winds are strong; they occur very rarely and are of short duration. In summer a vessel might anchor in 7 fathoms, but in winter not under 10 or 11 fathoms.

**Káda cove.**—On the east side of Ras ash Shaikh the coast runs South  $3\frac{1}{2}$  miles to the bottom of a narrow cove, where is a small village called Káda, with a large date-grove. The cove is half a mile wide at entrance, and  $1\frac{1}{4}$  miles deep; the soundings shoaling gradually from 10 fathoms. On its west side, near the entrance, is a large fishing village, called Makhi, with wells of pretty good water, the houses of which are built on the lower steps of the strata of the hills.

**RAS ASH SHAIKH MASÚD** is a high point, forming the west side of Khasab bay, which is 4 miles wide and 2 deep. This cape, often called Ras ash Shaikh, is a point of land sloping gently up from the cliffs at its north extreme, which are about 50 feet high, towards Fine peak, 4,470 feet high; the long regular slope of this point cannot be mistaken from the westward. There are two little bights at the north extreme of the cape, with white sandy beaches, and in the eastern is the tomb of the shaikh, after whom the point is named. It is only seen when close in, and with the little cove open, as it stands on the beach. It is the observation spot, and is in Lat.  $26^{\circ} 15' 27''$  N., Long.  $56^{\circ} 13' 01''$  E. A sailing vessel standing into Khasab bay, with a westerly wind, should not round this cape too close, so as to be becalmed under it.

The tide-stream is weak inside this point; but outside sets between it and Perforated rock, N.E. and S.W.  $1\frac{1}{2}$  to 2 knots.

At this point the inlets of the Ruús al Jebál end, the coast to the south-westward of it being comparatively straight. There are 40 fathoms at three-quarters of a mile West, and 30 fathoms one mile North of it.

The cliffs increase in height to the southward, on both sides of Ras ash Shaikh, at  $1\frac{1}{4}$  miles from which is a deep bight on the east side, with a few huts and a fine date-grove, named Hána. There is a well of good water here, about 300 yards from the beach, and said never to become brackish or dry up. Above this place, on the mountains, is the village of Haraf with about 100 men, the huts of which are plainly seen from a ship, when to the north-west of the cape. The inhabitants are chiefly fishermen, and keep their boats hauled up in Aida cove, a small bay with a well of excellent water, about a mile S.W. of Ras ash Shaikh.

**The COAST** on the west side of Ras ash Shaikh, runs S.W.  $\frac{1}{2}$  S.  $3\frac{1}{2}$  miles, in patches of cliff to Ras al Jádi, which is a bold cliff about 1,000 feet high, and conspicuous when seen from up or down the coast; and 11 miles S.S.W. of this latter is Ras ash Shuam, formed by a mountain about 2,500 feet high, sloping regularly down to the sea, and, like the last, conspicuous from the north or south, when there is seen a notch in the highest part of the mountain above it. To the southward of Shuam point the mountains begin to recede from the sea; the coast trending gradually to S.S.W. and S.W., and being, from this point, a low sandy shore, which continues the whole extent of the south coast of the Gulf. When a little distance off the coast, Fine peak, (page 84), is very conspicuous, forming a beautiful cone.

**The soundings** southward of Ras al Jádi are less abrupt, and the 40-fathoms line, which is three-quarters of a mile off that cape, is about 8 miles from the shore at Shuam point, where 25 to 30 fathoms are 2 miles off. This coast is quite exposed to the shamál, and vessels at anchor on it would have to put to sea at the approach of one, standing off on the port tack. There is no danger from Ras ash Shaikh to Shuam.\*

**Al Jíri** is a small village,  $1\frac{1}{2}$  miles below Ras al Jádi. It stands under the hills on a beach, which extends as far as Bokha. Al Jádi village is 3 miles below the point of the same name and inhabited by fishermen. There are some wells of good water near the beach.

**Bokha** is a village in a bay formed by a slightly projecting point, 5 miles below Ras al Jádi. This little bay is open to the northward, and quite shallow; there are 7 fathoms at one mile distance, deepening suddenly to 25, and thence to 40 fathoms at 4 miles off. There are three forts, one in ruins, in the place; a square fort on a hillock half a mile East of the town; and one on the western point of the small bay, with a high tower at one of the angles; this last is visible

\* There are several villages between these points; the description of them, as far as Shuam, is chiefly from Capt. Guy's Memoir.

9 or 10 miles. There is a plain behind it, with cultivation and date groves; there are also date trees between this place and Jádi. The inhabitants are chiefly fishermen.

Between Bokha and Shuam point are three little sandy beaches, with deep water close-to, in which are the hamlets Fúdar, Ghamtha, and Tibba, all inhabited by fishermen, with a few date trees at each.

**SHUAM FORT**, about 2 miles South of the point of that name, is the first town on the low sandy shore, there being a plain one to  $1\frac{1}{2}$  miles wide between it and the mountains, partly cultivated, with date-groves, vegetables, &c., and good water in wells; the inhabitants are cultivators and fishermen. One mile South of the town is a small tower with a hole through it, on a hillock about 50 feet high, and visible 12 to 13 miles; it makes from the southward like a small peaked hill. About 4 miles South of the town is a creek, used by boats at high water.

**The COAST** is nearly straight between Ras al Khaima and Shuam, and all low, the mountains approaching the sea to the northward of Shuam.

**The SOUNDINGS** from the commencement of this low coast begin to decrease, there being 10 fathoms at half a mile, and 20 fathoms 3 miles off, and they still farther decrease on advancing to the S.W.; bottom generally sand.

From Ras al Khaima, Shuam point bears N.N.E.  $\frac{1}{2}$  E. 16 miles; the soundings are 3 fathoms from half to one mile off shore, and 20 fathoms at 4 to 5 miles off.

**Rams** is a fort and small town in a date-grove, 6 miles N.E.  $\frac{1}{2}$  N. from Ras al Khaima; a tower, showing above the trees, is the principal object from seaward; it lies on a khor, the entrance to which is nearly dry at low water. About 2 miles inland of it is the small hill fort of Zái, which does not show well against the hills from the westward. It is of dark colour with a square tower at each end. About  $1\frac{1}{2}$  miles southward from Rams is a small creek, communicating with the khor at Ras al Khaima. The date-groves are a little distance from the shore, which is swampy here.

**RAS AL KHAIMA** (Tent-point), a large town, built on a long sandy peninsula or spit, is the capital of the Jowásim chief, whose authority is acknowledged in all places south of Ras ash Shaikh, as far as Jezírat al Hamra, also in Sharja and the little towns near it, and on that part of the east coast of Oman called ash Shameiliya. It may contain 4,000 to 5,000 inhabitants.

To recognize this place from seaward, it may be noted that the plain is here only about 6 miles broad, and increases in width very rapidly to the southward, as the coast turns here to south-west, so

that from the northward the town appears to be at the point where the mountains end. On a nearer approach is seen a range of high reddish-coloured sand-hills, which begin a mile south-west of this place, and extend past al Hamra. The town is chiefly of stone houses, with some square buildings higher than the rest, which are the skaikh's residences; on one corner of the highest is a little dome, which is about 60 feet above the sea, and visible 12 miles; the flag of the Jowásim (red with narrow white border) is shown on another high building to the left: there is a white round tower at the north end, and two square towers on the wall built across the peninsula at the south end of the town. The S.W. town on beach is in Lat.  $25^{\circ} 47' 42''$  N., and Long.  $55^{\circ} 56' 44''$  E. A large tree at the south end of the town is conspicuous. There is also a detached tower three-quarters of a mile south-west of the town, near the commencement of the red sand-hills. In running up from the westward, the end of these red sand-hills will be a guide for finding the place.

In crossing the gulf to this place, after taking a departure from the Tanb, the tide-stream, which runs strong up and down the coast, may throw a vessel out of her course. There is no danger on the coast, and 20 fathoms will be found about 10 miles off.

**Anchorage.**—A good berth is in  $5\frac{1}{2}$  fathoms,  $2\frac{1}{2}$  to 3 miles N.W. of the town; the holding-ground is good, and the natives say there is not so much sea in a north-wester as at other places on this coast. With the town South to S.E., and one mile off shore, there is a sand-bank with 11 feet on it, and 2 to 3 fathoms inside it; W. by N.  $2\frac{1}{2}$  miles from the town, the bank has only 2 to  $2\frac{1}{2}$  fathoms on it, with 3 or 4 fathoms inside it, and it is said to extend some distance to the south-west. The soundings are irregular when approaching the town on a South to S. by E. bearing, but vessels can get closer in on this than on any other bearing.

The entrance to the khor or backwater, is round the end of the low sandy point on which the town is built, and is  $1\frac{1}{4}$  miles to the north-east of the town; large unladen boats can enter at high water; it runs S.W. close to the back of the town, where the native boats lie; there are only 2 feet at the entrance at low water, but 9 feet, when inside, as far as the town. There are two low islets in the backwater opposite the town, on one of which is a small fishing village. A great many boats and baghalas belong to this port, which has quite recovered from its destruction by the expedition in 1819. Cases of piracy are now unknown, and the inhabitants of this, once the head of the piratical ports, are quite civil to Europeans. The inhabitants, who are of the Jowásim tribe, send about 20 boats to the pearl fishery.

On the east bank of the backwater a dense date-grove commences, extending far inland, and continuing along the coast to Rams.

Supplies of cattle, vegetables, and fruit may be obtained here ; water uncertain.

**RAS AL KHAIMA to ABU THABI.**—This coast, formerly the chief seat of the pirates, is low and sandy throughout, and runs nearly straight, in a general direction S.W.  $\frac{1}{4}$  W. for a distance of 120 miles. The mountains of the Ruús al Jebál are seen till past Dabai, in clear weather.

The towns are all built near the entrance of a khor or saltwater creek, of which there are many along this coast, often communicating with each other, or forming large backwaters, in which their vessels are kept. They are very similar in appearance, and it is difficult for the stranger to make out which town he is off ; on this account a somewhat detailed description of the appearance of each is given.

**The Great Pearl bank**, under which term may be included all the space on the Arab side south of the 20-fathoms line, begins on this coast ; opposite Sharja may be considered about the commencement.

**Supplies.**—Cattle and vegetables, &c., may be everywhere obtained ; the beef is often very good, and much better than the mutton. Water is scarce and indifferent, especially to the southward of Dabai, and probably could not be spared to a ship. It is generally obtained in shallow wells dug in the sand. Capital mullet are caught in all the backwaters, and fish is generally plentiful.

**ANCHORAGE.**—The shore, except just above Umm al Kaiwain, where the reef extends  $1\frac{1}{2}$  miles off, is safe as far as Ras Hapyura ; but thence to Abu Thabi, fronted by reefs ; the soundings above the former place are regular. The anchorage off this coast is quite exposed to the prevailing winds, holding-ground often bad, being hard ; and no vessel should attempt to ride out a winter north-wester, but put to sea on the approach of one, standing off on the port tack, as the wind blows about W.N.W., or even more from the westward. Vessels should anchor farther out in winter than in summer, and furl sails with reefs in.

**TIDES.**—The tide-stream sets straight along shore, N.E. and S.W., and may cause a vessel to find herself off the wrong place, after standing across the gulf. Its rate is from 1 to 2 knots, and the rise and fall varies from 6 to 8 feet. At Ras al Khaima it is high water, full and change, at 11h. 45m. ; and at 12h. or 12h. 15m. at Abu Thabi. The stream runs 2 hours or more after the turn of the tide.

**JEZIRAT AL HAMRA** is a fort and town, S.W. by W. 10 miles from Ras al Khaima, built on an island formed by the khor. The fort has 5 or 6 towers, and 3 or 4 round trees in it, one of which is large and conspicuous, and close to this is a high square tower with two rows of windows; there is also a tall slender tower at the west end of the town. There are no date trees here. The red sand-hills mentioned in page 93 end 2 or 3 miles to the south-west of this place.

The entrance to the khor is round a low sandy point called Ras Abu Ahmad, three-quarters of a mile N.E. of the town; it has 2 or 3 feet in it at low water in the entrance, and 7 or 8 feet inside; it runs to the south-west between the town and the strip of sand forming the beach, and is shallow opposite the town.

The inhabitants are of the al Zaáb tribe, and it is under the chief of Ras al Khaima.

The soundings off the town are 10 fathoms at 4 miles, and 20 fathoms at 12 miles distance; 4 fathoms being half a mile off; bottom generally sand. The coast between al Hamra and Ras al Khaima forms a slight and shallow bay.

**CAUTION.**—From al Hamra, Umm al Kaiwain point bears S.W. by W.  $\frac{1}{4}$  W. 14 miles. The coast between forms a slight bay; and a reef, nearly dry in parts, extends from 2 miles south of the former place to Umm al Kaiwain point, and 5 miles N.E. of this its outer edge is  $1\frac{1}{2}$  miles off shore. It shows well by day; 10 fathoms, a safe depth, are three miles off its outer edge, from which depth the soundings decrease gradually to 4 fathoms close to the reef.

**Khor al Baiza** is a creek, whose entrance is half-way between these two places, only navigable for small boats, and communicating with Umm al Kaiwain khor. On the seaward side of the island formed by this creek is a small fort,  $3\frac{1}{4}$  miles E.N.E. of Umm al Kaiwain point, with a date-grove to the west of it.

**UMM AL KAIWAIN**, an independent town, inhabited by the al Ali tribe, with probably 800 men; it is tolerably clean and well built, and sends 150 boats to the pearl fishery. A few Banyans are settled here, who carry on most of the trade. When about 10 miles off this place, or in 12 fathoms, it may be known by seeing six or eight detached towers standing apparently in the sea, one very much higher and larger than the rest, with a flagstaff; this one is seen after the others are below the horizon, showing like a boat. This and two other towers stand on the point, being part of a wall built across the isthmus. In the town are two high stone buildings, one with two towers, the other with one, and another tower stands about

a quarter of a mile east of the town, on the west bank of the khor. About  $1\frac{1}{4}$  miles east of the point stands a round kiln-shaped tower with a ruined mosque, a building with two rows of windows, close to the right of it, which marks the entrance of the backwater.

A vessel should anchor in 5 or 6 fathoms, with the high tower on the point (centre of the three) about South, but in winter, farther out in 8 fathoms.

Umm al Kaiwain point is of low sand with rocky beach, and about a mile to the south of it is a date grove. The soundings are regular, there being 4 fathoms at half a mile from the point, and 8 fathoms at 2 miles, while the 20-fathoms line is nearly 15 miles off, widening out towards the commencement of the Pearl bank.

From Umm al Kaiwain point the coast runs about East nearly a mile to the khor, which turns to South and West, forming the peninsula on which the town stands; it has a reef of sand and rocks, forming the west side of the entrance of the creek, extending off it to the northward.

The entrance to the khor, which has only 2 feet at low water, is 2 miles N.N.E. of the point, and has the shore reef before described (page 95) on its east side. It runs South till abreast of the town, where it passes between the present town and the point on which stood the old town,\* of which the only remains are the tower and mosque mentioned above.

At the town the khor is over a quarter of a mile wide, and carries a depth of 6 to 8 fathoms; it here splits into several branches, the main one running South, one to the eastward communicating with Khor al Baiza, and another branch bends to the West and round the town, and close to the back of Umm al Kaiwain point, forming the isthmus across which the wall (above mentioned) is built: this branch has one to 3 fathoms behind the town, where the boats lie. It forms an extensive backwater, with several low islets in it.

The present town was called Libîni before the destruction of the old town, and was then insignificant; but the old town not having being rebuilt, the inhabitants and name have been transferred to it. It is a thriving place, they own some large baghalas, and send 70 to 80 boats to the pearl fishery.

The coast from Umm al Kaiwain runs S.S.W.  $\frac{1}{2}$  W. nearly straight for  $6\frac{1}{2}$  miles to al Hamriyya: the soundings continue regular, bottom rocky; 6 fathoms are about a mile off shore. A vessel should not anchor too near the shore, as she will be liable to lose her anchor.

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\* Destroyed in 1819 by the expedition against the pirates.



**Al Hamriyya**, a small but rising place, whose inhabitants, of the tribe of al Náim, have asserted their independence of the Jowásim chief. It has a square fort on the shore, with 5 towers in a cluster, visible 11 miles, also two detached towers to the southward near the creek, which is small. There are no trees near this place; it sends 50 boats to the pearl fishery.

**AL AJMÁN** fort, bearing S.S.W.  $\frac{3}{4}$  W. 12 miles from Umm al Kaiwain point is under an independent chief, of the tribe of al Náim. The fort is small and high, and one of the towers of it, on which the flag is shown, is much higher than the rest; it is visible 12 to 13 miles. There are only a few date trees north of this place, but south of this they are thick as far as Shárja. The water is bad, and obtained from wells about a mile to the south-west of the town. Ajmán sends 60 boats to the pearl fishery; it was partly destroyed in 1819 by the expedition against the pirates.

The khor is the most accessible one on the coast; its entrance is close to the northern end of the town, between two spits of sand extending a quarter of a mile from the shore: the bar is of sand, while in most of the other creeks it is rocky; and has 5 feet at low water; at high water very large boats get in.

Opposite the town there are 2 fathoms at low water in the khor which there turns to the eastward, and widens into a shallow backwater; the channel is near the town side, there being a bank extending half way over from the north-east low sandy entrance point.

The soundings off al Ajmán are slightly irregular, the bottom being rocky; and three-quarters of a mile from the shore, opposite the town, is a 2-fathoms rocky bank, with 4 fathoms inside it: 10 fathoms, about 5 miles off shore, is a safe depth to approach at night. The ground is bad for anchorage.

**Al Haira** and **Fasht** are two small villages on the shore, within a quarter of a mile of each other, 3 miles from al Ajmán, and 2 miles from Shárja point; the former, which is the northern, has two detached towers, and at Fasht there is a small square fort; the rest of both these villages is of mat huts. Half a mile from the beach, and seen above the date trees behind these places, is a large round tree, conspicuous from seaward; it is the last thing seen, except Ajmán high tower, when sailing away from the coast, or at a distance of 12 or 13 miles. There are date-groves all the way to Ajmán and Shárja. The khor is very small. They are dependencies of Shárja, and send between them about 30 boats to the pearl fishery.

**SHÁRJA**, the most important town on the coast, is under the chief of Ras al Khaima, and contains 8,000 to 10,000 inhabitants, chiefly of the al Jowásim tribe. It is about  $1\frac{1}{4}$  miles in extent along the east bank of the khor, and there are several detached towers in it; the highest square one, a little to the right of the centre of the town, is that on which the flag is shown. This tower is in Lat.  $25^{\circ} 21' 34''$  N., and Long.  $55^{\circ} 23' 25''$  E.

It has a large proportion of stone houses, and there is a high round tower at the south end of the village of Liyya, which appears from the sea to be part of Shárja.

At the south end of the town is some white rocky rising ground, 30 or 40 feet high, forming a bluff at the south end, which is conspicuous approaching the place from the north or north-west. The date-groves extend from al Ajmán to Shárja, and to the southward.

Shárja sends about 350 boats to the pearl fishery: they build very fine boats (bakáras and batíls) here. There is a British agent, an Arab; and many Banyans are settled here. Several baghalas belong to this port.

The soundings are nearly regular, 5 fathoms are less than half a mile off, opposite Liyya (or Shárja) point, and one mile off at the entrance to the khor; 9 fathoms are 3 miles off. The anchorage is with Liyya point from South to S.S.E. (so that boats can fetch off and on from that point with the sea breeze), in summer in 5 fathoms, but in winter in 6 or 7 fathoms; the holding ground is bad, being rock with little sand. Off this place the 20-fathoms line is 25 miles from shore, the great flat called the Pearl bank having fairly commenced.

The khor is very small and shallow, the entrance is a mile N.E. of the flagstaff tower, and it runs to the south-west between the town and the sea, leaving only a narrow strip of sand outside it, winds round the little bluff before mentioned, and spreads out into a small backwater, joining the khor from Khan village. Notwithstanding there is only about one foot on the bar at low water, they manage to get in large unladen baghalas, &c.

The best place for boats to land is not at the creek, where there is generally a surf, but at Liyya point before mentioned. This is a little projecting rocky point opposite the town (generally there are some native boats lying there), which you pull round, and can bring to bear about N.N.W.; it is the only place to attempt to land at in even a moderate shamál. There are plenty of ferry boats across the creek, which on landing here is between you and the town.

**Liyya.**—On this point, and separated from Shárja by the khor, is the large village of Liyya, a suburb of Shárja, all mat huts; the large round tower at its south end is a quarter of a mile from the point.

From Liyya point the south point of Dabai creek bears S.W.  $\frac{1}{2}$  S.  $7\frac{1}{4}$  miles, the coast forming a slight bay between these two points. At  $2\frac{1}{4}$  miles south-west from Liyya point is a little creek with two small towns, called Khan and Abu Hail on opposite sides of it. These two places are dependencies of Shárja, and contain, the former about 1,000, the latter also called Mumzar, about 2,000 inhabitants. They are a good mark for picking up Shárja.

**Khan**, the northern and smaller town, is nearly all built of mat huts, with five detached towers in different parts of it. The khor, which is insignificant, splits into two branches; one to the north-east, which joins Shárja backwater; the other to the southward, behind Abu Hail village. It sends 25 boats to the pearl fishery. The land inshore of the town for some miles is low and swampy.

**Abu Hail** is also built almost entirely of mat huts, and has four towers, nearly in line, N.W. and S.E., at its south end in a wall built across from the sea to the backwater. These towers, and those of Khan, look high in proportion to the size of the houses, and are easily recognized. This place sends 40 boats to the pearl fishery. The ground is bad for anchorage, as at Shárja; the depth is 5 fathoms at a mile off shore. There are no date trees between this and Dabai; the coast line is pure white sand.

**DABAI** is a large town under an independent chief, and it contains, with the suburb of Deira, 5,000 or 6,000 inhabitants; the tribe is the Abu Felása, a branch of the Beni Yas. A few Hindus reside here.

The town stands a little back from the shore; there is a date-grove behind it, which also extends a mile to the southward, ending in a detached clump, but none north of it. It is recognizable as being the last town on the coast, there being not a single date tree or house from this all the way to Abu Thabi. Jebel Ali also can be just seen from the anchorage. The highest building is the shaikh's house, a high square castle, with a tall round tower at the south-west corner, on which the flag is shown; there are eight or nine smaller towers in the town and suburb.

Dabai sends a large number of boats (about 150) to the pearl fishery; which are also employed in other fisheries during the winter.

A flat stony reef extends upwards of a quarter of a mile from the point and half a mile off the coast opposite Deira, with only 6 feet water on its outer edge, and extending some distance towards Abu Hail.

The south low sandy entrance point of the khor is half a mile N.W. of the town, and projects slightly from the line of coast. The entrance has only 2 feet at low water in parts, with rocky bottom, and is much blocked up by the reef; the channel winds to the southward, close past the south entrance point; a spit extends off the opposite or Deira point, which bears S.E. a third of a mile from the former; the khor then turns gradually to the east, between the town and Deira point; where it is only 150 yards broad, and has 4 to 5 fathoms water. It extends for miles to the south-east, but is only used by fishermen beyond the town.

On the north entrance point of the khor, opposite the town, stands a large suburb of mat huts, called Deira, with a few towers on its north side. The reef is half a mile off shore opposite this place, and decreases to the northward.

The anchorage off Dabai is with the low sandy point on the south side of the khor on with the flagstaff tower, S.E. by S. The depth is 5 fathoms at rather more than half a mile from the shore, and a vessel should not anchor any nearer; 6 fathoms, about one mile off, is a good berth. There is no shelter from a shamál.

The COAST from Dabai to Abu Thabi has an average direction of S.W.  $\frac{1}{4}$  W. for about 70 miles; it is quite barren and uninhabited, throughout very low, with tufts of coarse grass growing on the sand-hillocks intersected by creeks, and in parts by extensive swamps; no tree is seen larger than a mangrove bush. The coast is so uniform in appearance that the smallest peculiarities are noted by the Arabs and names given to them; though they are of little use to shipping, as they can only be made out when quite close in, as in small boats running along the coast. There are no inhabitants, but landing on the mainland between these towns, except with an armed party, would be hazardous, as the coast is often visited by the Bedawín of the interior.

**JEBEL ALI**, the only landmark on the coast, 220 feet high, is a flat-topped hill, sloping gradually at each end, visible 17 miles; it is 3 miles inland.

**Ras Hasa** is a name given to a little rocky point, projecting very slightly from the line of coast, and only shows as a small dark patch on the white sand when close in. It is 30 miles from Dabai, and

the soundings between are regular, fine sand, 3 fathoms at three-quarters of a mile off, deepening regularly seaward. Another such point is Ras Kantút, about 5 miles to southward of Ras Hasa.

**Khor Ghanátha** and **Ghurábi** are two creeks, where mangroves are cut for firewood; the former may be known by mangrove bushes at the entrance, which are left as a landmark by the Arabs; Ghanátha is the larger of the two, and said to be easily entered by large boats.

From this to Abu Thabi there is a succession of creeks, mostly communicating with each other, some with deep water inside, and forming extensive swamps and backwaters, extending many miles into the interior, and with merely a small strip of sand between them and the sea. They are visited by Arabs to cut firewood or to fish in. The entrances are very shallow.

**RAS HANYÚRA** is a very low sandy point, forming the north point of a shallow bay 3 miles wide. Many creeks have their mouths in this bay; the south low sandy point is called Maraifjain. Neither of these points would be visible much more than 5 miles. The landmark by which the Arabs find it is a small cliff at the south end of a little table land, 20 or 30 feet high, the top of which slightly overhangs the base, and stands on the shore at the bottom of Hanyúra bay; it is visible 7 or 8 miles.

**HADD AT THALEI REEF.**—From the above point to Abu Thabi, a distance of 21 miles, the coast is fronted by an extensive reef, commencing a little way above Ras Hanyúra, off which it extends  $1\frac{1}{2}$  miles from the beach. Its outer edge runs to the W.S.W. 7 miles, when it is probably 5 miles from the land, and then turns to the S.S.W., joining the reef opposite Abu Thabi town. It has 6 fathoms close-to; the soundings are not a good guide approaching it, as there are great overfalls to the North and N.W. The natives call it Hadd at Thalei, and say there is a boat channel inside it, used by them during shamáls.

**Ras al Ghuráb** is a rocky point with low sand-hills, about 11 miles N.E. of Abu Thabi; here the reef extends 2 miles off shore, the most projecting part of it being between this point and Hanyúra. There is a khor at this point, said to be very extensive, with more water in the entrance than any on the coast, and deep water inside.

**Ras Laffán** is a low point 3 miles N.E. of Abu Thabi, on the north side of the entrance of a khor, which runs to southward, joining the great backwater behind Abu Thabi; baghalas belonging to that place are hauled up in this khor.

**ABU THABI** is the most populous town on the coast. It stands at the west extremity of the country of Omán, and is the chief town of the great Beni Yas tribe, and under an independent chief. The first establishment of the tribe here took place upwards of 100 years ago.

The town extends for near 2 miles along the shore; the fort is small, with six towers close together, on one of which is the flagstaff. It is in Lat.  $24^{\circ} 29' 2''$  N., and Long.  $54^{\circ} 21' 27''$  E. With the exception of this and a smaller tower on the beach, the town is exclusively built of date mats; at 2 miles S.W. of the fort is the entrance to a large bay or backwater,  $3\frac{1}{2}$  miles wide at the entrance, and extending possibly 20 miles into the interior, and there are several islands in it; the greater part is shallow, but there are many deep channels; it has not been sounded. By its connection with Khor Laffán it makes an island of the land on which the town stands; but there is one part fordable at low water. A few stunted date trees, about a mile inland of the town, are the only vegetation seen from this place.

The town contains about 20,000 inhabitants, and there are some Banyans here. It sends 600 boats to the pearl fishery. This tribe is a fine race of men; they wear the hair long over the shoulders, twisted up in plaits. The chief is very friendly to the English. Cattle might be obtained here; but the only water found is exceedingly brackish, all the good water being brought from Dabai, and sold at the rate of one kerán for 2 or 3 goat-skins or mussuks-full.

The Abu Thabi fishing boats, out of the pearl season, are found at every island, creek, &c., between this place and Khor al Odaid; the chief of this place claiming the sovereignty over the intermediate coast. His authority is nominally recognised also by the Bedawín on this part of the coast.

**PILOTS.**—A ship intending to visit the coast, &c., between Dabai and al Bidaa would get the best pilots at this place.

**DIRECTIONS.**—A vessel bound to Abu Thabi should take a departure from the island Sir Abu Nuair, and keep the peak of that island N.  $\frac{1}{4}$  W. while in sight: great overfalls will be met with in the soundings; and she must be prepared for finding herself set to either side of the place by the tide. A good look-out must be kept from the mast-head, as the fort, the first thing seen, will not be visible more than 8 miles from the deck, or when in 8 fathoms; which depth is also found close to the reefs. The reefs to the eastward of the place are the chief danger. If coming down the coast, care is requisite particularly at night, in passing the Hadd at Thalei reef.

The fort should bear S.E. when made. Large vessels anchor with the fort S.E. by E. distant 2 to  $2\frac{1}{2}$  miles, in  $4\frac{1}{2}$  or 5 fathoms, where they are quite exposed to the prevailing winds; but vessels not drawing more than 12 feet may enter the inner anchorage.

To stand into the inner anchorage, get the fort to bear S.E. by E.  $\frac{1}{2}$  E., and steer for it, looking out for the west point of the reef, which has but a few feet water on it, and shows well. It is only 4 cables from the sandy beach, and must be rounded quite close. The channel between the reef and the north-west sandy point of the town is only  $1\frac{1}{2}$  cables wide, and has 12 feet at low water. Hauling to northward, close round the reef, a vessel may anchor in  $2\frac{1}{2}$  or 3 fathoms, with the fort South to S. by E., a quarter of a mile off shore. The afternoon is the best time to enter this anchorage. It is quite sheltered by the reef from all winds. There is a passage on the east side of the reef used by native craft, which a vessel might use to leave this anchorage with a westerly wind; the eye must be the guide in attempting it.

The shore is very low, all white sand; the only landmark besides the fort is a low hill, about 50 to 80 feet high, on an island in the backwater, called Jebel Fataisa, 6 miles S. by W. of the fort. This hill is the first object seen from aloft on approaching Abu Thabi, when it appears of a dark colour, but on a nearer approach the lower part will be seen to be white sand.

**SIR ABU NUAIR ISLAND**, called by the fishermen simply Sir, is about  $2\frac{3}{4}$  miles long by 2 miles broad, and lies near the north edge of the Pearl banks, 45 miles N.  $\frac{3}{4}$  W. from Abu Thabi. The island is covered with hills, chiefly volcanic, except the south-east corner, which is a very low sandy point, half a mile in length, and formed probably by the action of the sea in north-westers, which sets round both sides of the island, and meets there. The outline of the island is very irregular, the only remarkable feature being a table-topped peak, 240 feet high, near the south end of the hills, rather conspicuous, except from northward; it is visible 17 miles.

This island is safe to approach; the shore reef, which nowhere extends more than a quarter of a mile off, is farthest off shore on the south side. By night care must be taken, in passing the island on the south side, not to run on the low sandy point, which cannot then be seen, the island appearing to end with the hills. The soundings are not a good guide in approaching it, there being 10 to 15 fathoms close to the shore reef, and the same water several miles off; and to the north-west of the island are great overfalls, near the edge of the Pearl bank.

The point of observation, the S.E. low sandy point, is in Lat.  $25^{\circ} 12' 44''$  N., and Long.  $54^{\circ} 14' 33''$  E.

The island is claimed by the al Jowásim chief, but it is not permanently inhabited. It is barren, nothing except brushwood growing on it. There is brackish water in wells near the east side; some sulphur is said to be found. During the pearl fishery the island is visited by fleets of boats, to open the oysters, &c.; and during the winter there are generally a few Shárja or Dabai fishing boats here, the crews of which, with their families, erect temporary huts, and remain for some months fishing, chiefly for sawfish and sharks.

The anchorage is off the south-east low point, on the east side, in 12 fathoms, a third of a mile off shore; sheltered from the shamál, but open to the nashi.

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## CHAPTER V.

SOUTH SIDE OF PERSIAN GULF.—ABU THABI TO RAS  
RAKKIN.

VARIATION, 0·40 West in 1890.

**GENERAL OBSERVATIONS.**—The whole of the coast is low and sandy, or stony, with here and there rocky hills or else sand hills, of moderate height. It is quite barren and desolate; water only obtainable at few points, and then very indifferent. From Abu Thabi to al Wakra (about 60 miles south of Ras Rakkin), a coast line of 250 miles, there are no fixed inhabitants, not a village or house. The coast is occasionally visited by the Bedawín of the Beni Yas, Beni Hájr, and al Manásir tribes, who would attack any persons landing, if not in a strong armed party.\*

Great reefs extend for miles out of sight of land along its whole extent, sometimes with channels inside them. They are generally flat and stony, with patches of broken coral, and irregular depths over them from half to 3 fathoms; they show well, except on cloudy days, or when under the sun. The water is shoal everywhere, with great overfalls, forming the largest and richest portion of the Pearl bank. The 20 fathoms line, within which nearly all the overfalls are found, and which may be considered the edge of the Pearl bank, passes about 20 miles north of Sir Abu Nuair, thence nearly straight, about W. by N., to Hálul, and thence to N.W., passing about 30 miles north-eastward of Ras Rakkin. Within this line the depths average from 10 to 15 fathoms, with occasional deep places of 20 to 23 fathoms, and many shoal knolls, with 3 to 9 fathoms, which latter are the Pearl banks proper, and probably each one has a name by which it is known to the Arabs. The water is everywhere very clear. When near or within the great reefs, it is not safe to be under weigh after dark, the eye being the only guide; a good look-out from aloft is indispensable.

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\* Captain Brucks states in his Memoir that the boats of the surveying vessels, in 1824, were several times attacked.

*See Admiralty chart, Persian gulf, No. 2,837 a, b; scale,  $m = 0\cdot08$  of an inch.*

Many islands lie off the coast, some of them high, and each of them has a projecting, low, sandy south-east point, similar to that described at Sir Abu Nuair, in page 103. They are all barren and without fresh water, except one or two, where a little very brackish water is found; and with the exception of Dalma, have no permanent inhabitants. They are frequented by the pearl boats during the summer, and in the winter by Abu Thabi fishermen, a few of whom are generally to be found at each of them. They take their families, and make a stay of 2 or 3 months. They catch and dry fish, and take turtle, which abound on the reefs, for oil.

The coast is never visited by Europeans, except the part from Ras Rakkín to al Wakra, which is occasionally visited by the ships of the squadron stationed in the gulf. It is but seldom that even the Arabs land on the main in this part.

A vessel intending to visit the coast, or navigate within the reefs, should have an Abu Thabi pilot on board

**ABU THABI to JEZIRAT SIR BENI YAS.**—The actual coast line of this part is little known, it is difficult even to sight it. Reefs lie off it to a distance of 10 to 30 miles, with many low islands on them, some of considerable size, and overgrown with mangroves. There are many creeks and backwaters on the eastern part, and channels through and among the reefs, which are only partially explored. The coast is apparently rather a stony than sandy desert.

**The tide** appears to be regular, but the progress of the wave is much retarded in the shoal water, and is several hours later near Khor al Odaid than at Abu Thabi, but observations have not been made on the tide hours. The rise and fall at Sir Beni Yas is about 8 feet. The stream runs very strong in places, as round the points of islands, through narrow channels, between reefs, &c.

**The COAST** from Abu Thábi has an average direction of S.W. by W. for 30 miles, with a reef extending off it 3 miles at Jezírat al Bahrání, and 8 miles farther west. The shore is made up of a number of low islets, formed by creeks running in behind them and detaching them from the mainland proper, which, as is the case close to the north of Abu Thabi, lies at some considerable distance, and has not been explored. Many of these islets, and the mainland behind them, are resorted to by the Arabs to cut mangroves for fire-wood, and the creeks are visited by fishermen. All the creeks are said to be shoal at the entrance, though with deep water within. There is no description of this part left by the former surveyors beyond a few lines in Capt. Brucks' Memoir, and it has not been visited since

**Jezírat al Bahráni** is a low sandy island, about 5 miles in length, on the south-west side of the Abu Thabi backwater; it has some mangroves on it.

Jebel Abu Kashásha is a small hill on the island next to south-westward of al Bahrani, and used as a landmark by the Arabs.

**Khor Kantúr** is a large channel in the reef, 22 miles from Abu Thabi, a mile wide at the entrance, and extending South for 8 miles, where it splits into two branches. It has 2 fathoms at low water at entrance, and 4 or 5 farther in. On the east bank, near the south end, is the island of the same name; and to the eastward of the latter, separated from it by a small creek, is Umm al Majárib, another small island. These two islands are several miles in extent, low, and grown with mangroves.

**Ras al Kahaf** is a flat-topped rocky point, comparatively elevated, and probably on the mainland, projecting between Umm al Majárib and Jebel Abu Kashásha.

**Jezírat Saláli** is an island 7 miles long, on the west side of Khor Kantúr; it has a small hill near the east side, the rest of the island being low. Through the channel to the west of this island boats can get into Khor al Bazim at high water.\*

**BAZIM.**—The great reef on the west side of Khor Kantúr extends uninterruptedly for 53 miles in an East and West direction, and has a chain of islands on its southern edge, called generally by the Arabs Bazim,† although each has its particular name. On the south side of this reef, between it and the main, lies a great inlet called Khor al Bazim.

**Hálat al Mubarraz**, a low narrow sandy islet, without any vegetation, is about half a mile in length, and being only 3 or 4 feet above high water, is not visible more than 5 miles. It lies West, a little southerly, 53 miles from Abu Thabi, on the south-east edge of a great detached reef called Rak al Haji, which has not been surveyed. It is probably about 8 or 9 miles in length and breadth, and there are one or two sand-banks on it, dry at low water. The channel, called Khor Bashúbar, South of this islet, between it and the Bazim reef, has 7 to 8 fathoms water, and is about 2 miles wide, but the tide runs strong through at springs.

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\* The last five paragraphs are from Captain Brucks' Memoir, the authors not having visited that part.

† It is to these islands that Captain Guy gave the name of East India Company's islands, which tended to mislead strangers, especially foreigners. It is now obsolete.

**Hálat Hail**, an islet similar to the last, but much larger, lies S.E., about 5 miles from al Mubarraz, and is barely in sight from it. It marks the opposite side of Khor Bashúbár, being situated on the great Bazim reef, and near its northernmost point.

The whole northern edge of this reef is only approximately delineated and the lead is no guide in approaching it, there being 6 to 10 fathoms close to, and no deeper water at 15 miles distance.

**RAK AZ ZAKÚM** is a large pearl bank, the shoalest part of which, 3 fathoms,\* is 38 miles N.W. by W.  $\frac{1}{4}$  W. from Abu Thabi. The soundings are but little guide approaching it. There is a clear channel about 18 miles in width between it and Rak al Haji; its extent is not very accurately ascertained.

**FASHT BU TÍNI** is an extensive reef, with five or six dry sand-banks on different parts, the centre of which is W.N.W. about 18 miles from Hálat al Mubarraz, and south from Zirkuh island. It is 9 miles in extent, and, in parts, is nearly dry for miles. The fishermen on this reef, as well as on many others, may be seen walking about knee deep in water, looking for pearl oysters, far from their boats, which has a singular effect. There is a clear channel between this and Al Haji reef, called Khor Halj, with 5 or 6 fathoms; and also to the southward between it and Reideim, the north-west portion of the great Bazim reef.

**DIRECTIONS.**—A vessel may pass to the southward of this reef by day. The dry banks on the Bu Tíni may be seen from aloft some distance from the edge of that reef, while Bazim al Gharbi (the western islet on the Bazim reef) may be seen from aloft in mid-channel. If passing through Khor Halj, keep on the Bu Tíni (the weather) side, and keep the sand-banks of that reef in sight till past it, taking care that a look-out is kept for the pale green water of al Haji reef to the eastward. If passing through Khor Bashúbár, after leaving the Bu Tíni reef, endeavour to make the edge of al Haji shoal by steering carefully towards it, keeping a good look-out; and run along it till Mubarraz islet is sighted, which should be passed a quarter to half a mile off. These passages should only be used with a fair wind, and the sun astern of the vessel. Between Mubarraz and Abu Thabi the sea is very imperfectly sounded all south of the Zakúm bank: there are great overfalls.

**KHOR AL BAZIM** is an extensive inlet or blind channel, lying between the Bazim reef and the main. It is between 40 and 50 miles long, and from 5 miles broad at the entrance to one or  $1\frac{1}{2}$

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\* Captain Brucks.

miles at the head. The khor has been fairly surveyed, excepting the entrance, which is quite unsounded. To enable a vessel to navigate this channel with certainty, or to the westward towards Sir Beni Yas, a more detailed survey on a larger scale is required; but with a good look out, a vessel of light draught may safely enter it. The number of 3-fathoms patches, of which there are doubtless many more than shown on Guy's chart, would render it hazardous for a large vessel.

The entrance is 19 miles east of Sir Beni Yas. It is about 6 miles wide between the west part of the Bazim reef and the reef extending off the islet called Aich. The soundings in the khor decrease from 10 fathoms at the entrance to the head, and are very irregular: its general direction is E. by S.

**BAZIM AL GHARBÍ** (*i.e.*, the western) is a low islet, about 2 miles in extent, partly covered with mangroves. It is the western of the group on the Bazim reef, and about 2 miles from the western edge; the north-west portion of the reef, called Reideim, and shown on Guy's survey as detached, extending 7 miles to N.W. of it. The island is visible from the deck about 6 miles. There is no water on it; a vessel might obtain a considerable quantity of green mangrove wood for fuel here, by the crew cutting it, as probably also at the other islands to be described on this reef, which are also all without water.

**Aich or al Isha**, a low sandy islet, 10 miles west of the last, on the opposite side of the entrance of Khor al Bazim, lying on a reef which extends to the northward 8 miles from Aich, with several dry sand-banks on it; the north-east point of it is called Ras Barúd.

**DIRECTIONS.**—To enter Khor al Bazim from the northward, a vessel should keep Zirkuh peak N.N.E. while in sight, sighting the sand-banks on Fasht Bu Tíni; and when these are all left behind, stand down South, looking out sharp for shoal patches; she would then either sight Aich or Bazim al Gharbí; and when the latter bears E.N.E., haul up for it, looking out for the south-west point of the Bazim reef. If intending to anchor at this island, she may do so opposite the east end, one mile off shore, in 5 fathoms, clay, good holding ground, sheltered from all winds by the reef.

If only passing the island, it should be kept well in sight, so as not to be too close to the shore reef, which, opposite this, extends 6 miles off shore. From this anchorage two points of the mainland are seen: Ras as Sawámi, the eastern, is a light coloured cliff, apparently about 50 feet high; the other, of similar appearance, is

called Ras Jaliyya, from an imagined resemblance to a fort. A small anchorage, called Bander Marfa, is on the main to the eastward of as Sawámi, where some intercourse was once carried on between piratical boats and the Bedawín. The mainland from this continues in an average direction East and West.

\*After passing Bazim al Gharbi the soundings appear more regular, and a succession of islands will be sighted, which should all be passed one to 2 miles off; being guided by the eye in approaching the reef. The third island, called al Fihá, is 6 miles in length: the fourth island, which is rocky, may be passed close to: the next, called al Junaina, also rocky, lies  $1\frac{1}{2}$  miles from the khor, and has several detached rocks near it: the eastern and largest of these islands has low sand-hills on its western part, and is about 16 miles long. It is called Jezírat Abil Abyaz.

**SIR BENI YAS** island is about 6 miles North and South, and 4 miles broad, and like Sir Abu Nuair, is called merely Sir by the boatmen. It has a mass of volcanic hills near the centre, whose two highest peaks, 430 feet high, are close together and visible 21 miles. The shores of the island are low, except a small hill, 60 or 80 feet high, on its east side. Bad water may be obtained by digging on the north-east side, near a ruined village on the shore; on the south-east side is a singular land-locked natural harbour, half a mile in length and breadth, with 6 fathoms inside, bottom mud; and 4 fathoms in the entrance, which is only 400 yards wide: the tides are strong in the narrow entrance. This bay was called Meriton bay by the discoverer, Lieut. Grubb, I.N. (1820), the sandy entrance point is in Lat.  $24^{\circ} 16' 31''$  N., and Long.  $52^{\circ} 37' 16''$  E.

Rashid is a low, flat rocky islet, N.N.E., 4 miles from Sir Beni Yas, with a channel 2 miles wide between; it is three-quarters of a mile long, and only visible 5 or 6 miles. The shoals from Aich (al Ishah) islet to Rashid have no practicable passage through them.

**DIRECTIONS.**—To proceed to Meriton bay, on the south-east side of Sir Beni Yas, after sighting the island, if coming from the northward, steer for it on a south bearing till Rashid islet is seen, which should be passed within a mile, to avoid the reef extending off the north part of Sir Beni Yas. Great overfalls will be experienced north and N.W. of Rashid. With the peak of the island bearing West, there is a detached patch lying a mile off shore. There is a low white sandy islet, only a few feet above high water, lying  $3\frac{3}{4}$  miles off Sir Beni Yas, east of the highest peak, with that

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\* The following paragraph is compiled from Captain Brucks' Memoir.

peak nearly on with the little hill near the east point. It is quite practicable to work through the channel between Rashid and the island, as the reef on both sides shows well.

After passing to eastward of the above patch, or when the peak bears W.N.W., haul in for the sandy south-east point of the island, when Meriton bay will be seen over the low spit forming its south side, and anchor in 7 fathoms, clay, a quarter of a mile off shore. A reef extends three-quarters of a mile to the East and South from the south tip of the island, so that a vessel should not stand too far over towards the west side of the entrance of the bay. The little hill on the east point of the island should be on with the low south-east point, or with the east side of the bay. This anchorage is sheltered from all winds. The hills on the island are 2 miles distant from this south-east point. If wishing to enter the bay, which, as the tide runs strong, is not recommended unless particularly required, the deep water will be found close round the end of the sandy tongue of land, or east entrance point; the water inside is everywhere deep.

This is the best passage in, that south of the island being less than a mile wide, between the reef off the south tip of the island, and that extending 2 miles off the opposite point of the main. This passage, also, has only 3 or 4 fathoms in it, and the tides set strong through with eddies.

The north point of the main,  $3\frac{1}{2}$  miles from the south point of Sir Beni Yas, is low, with a reef extending in parts 2 miles off; and 2 miles S.W. of it is a mass of hills, 350 feet high, resembling an island when first seen, and called Jebel Thanni.

There is a second little sandy islet, about 3 feet above high water,  $3\frac{1}{2}$  miles to the south-eastward of Meriton bay, with deep water all round, and 6 miles farther to the south-east are two low islets with stunted grass called Jezirat al Hamar, lying on the shore reef, at the bottom of a great bight in it; they are about 2 miles off the mainland, which has low stony hills on it. The shore reef projects from these islets 5 miles to the north-west, and is steep-to, with 16 or 18 fathoms water near it, but but they may be approached on their western side to half a mile.

There is a passage from Sir Beni Yas, past Aich into Khor al Bazim, but it requires a fair wind and some care. The sandy islet mentioned already, east of Beni Yas peak, has a small reef extending north-east from it, and a  $1\frac{1}{2}$ -fathoms patch lying one mile S.W. of it; pass close to the southward of these, looking out on the starboard hand for the point of the shore reef, and keep Beni Yas peak West, till Aich is sighted, which pass quite close to on the south side, as there are two

patches within a mile S.E. of it. When past these a vessel may stand over to Bazim al Gharbi. Before reaching Aich, many little dry sand-banks will be seen to the northward, lying on the reef which extends between that island and Rashid.

**ZIRKUH**, the highest island on the Arab side of the Gulf, has a mass of volcanic hills on the centre part, with one rather remarkable peak, 540 feet high, and visible 24 miles; the plain at its S.E. end is  $1\frac{1}{4}$  miles long, the island is  $2\frac{2}{3}$  miles long, North and South, by  $1\frac{1}{2}$  miles broad, and has no water, nor any vegetation except stunted grass and brushwood. A flat reef extends a short distance off all round, except at the south point; it is most extensive in the bay on the east side, where it is three-quarters of a mile off shore. On the north and west sides there is but little reef. The peak is in Lat.  $24^{\circ} 51' 25''$  N., and Long.  $53^{\circ} 5' 13''$  E.

The anchorage is with the south point from West to W.S.W., half to three-quarters of a mile off shore, in 4 or 5 fathoms. A vessel here will be sheltered from the shamál, but some swell rolls round the island.

This island, being larger, affords better shelter than either of the four next mentioned. The soundings are little or no guide approaching it, owing to the overfalls in every direction; this remark applies also to the other islands about to be described. At 15 miles to the north-east of it is a pearl bank carrying 9 and 10 fathoms water, and a shoal is reported with the island bearing N.W. by W.  $\frac{1}{4}$  W., said to have only 20 feet on it.

**CAUTION.**—At  $1\frac{1}{2}$  miles South of this island, is a shoal ridge with  $2\frac{1}{2}$  fathoms least water on it, according to Guy's chart. We did not find less than 3 fathoms, and the Arab pilot said this was the least water. The tide-stream is strong at springs, between this shoal and the island, causing rippings like breakers, which extend in a north and south direction off the south end of the island.

**Das** island is  $1\frac{1}{4}$  miles long and three-quarters of a mile wide, the hills, highest 145 feet, are confined to the northern half, the low south part being three-quarters of a mile long. The hills are of even outline without any remarkable peak, and are visible 15 miles. There is no water on the island. It is safe to approach to half a mile, or even less, there being very little reef off it.

The anchorage is off the south-east low sandy point, about half a mile in 5 to 8 fathoms, but much swell would be felt in a shamál as the island is so small and nearly end on to the wind. The best landing is on the west side of the south-east point.

Observation spot on S.E. low sandy point is in Lat.  $25^{\circ} 8' 23''$  N., and Long.  $52^{\circ} 34' 6''$  E.



**Jezirat Karnein** (anglicé, the two-horned), is  $1\frac{1}{2}$  miles long N.W. and S.E., by half a mile broad. It has three remarkable detached dark peaks, highest 190 feet, all nearly precipitous, close together on its north end, the southern part being quite low. When first seen, the three peaks, on some views, resemble a ship under sail. The island is visible 17 miles and is safe to approach to a quarter of a mile. No water.

The anchorage is in seven fathoms, half a mile off the south side; shelter about as good as at Das.

**Arzana** island is  $1\frac{2}{3}$  miles long by 1 mile broad; it is covered with hills, except a plain of half a mile, at the south end. The hills have nothing very remarkable in their shape; the highest is 200 feet above the sea, and visible 18 miles. There is no water on it. The reef off the island is small, nowhere extending more than one-third of a mile from the shore, with deep water between it and the pearl banks described below. The anchorage is with the south point about West, half a mile off shore in 4 or 5 fathoms.

**CAUTION.**—This island has several pearl banks on its north and east sides, viz.:—an extensive one with 3 and 4 fathoms 8 miles N.N.W. of it; another, a 3-fathoms bank, N.E. 2 miles from the island; a 5-fathoms bank 11 miles to S.E.; and the two following, from Captain Brucks' description:—East of the island  $1\frac{1}{2}$  miles distant, is a small bank with 2 fathoms, and  $2\frac{1}{4}$  miles S.E. of the island, is another small bank, having one fathom only in one part. The *Marie* sailed over the site of this latter without getting anything less than 3 fathoms; and the pilot said he knew of no less water; but caution is required, as indeed, everywhere south of Das, as it would be almost impossible to find every shoal patch by sounding; the look-out is the best guide. A vessel drawing more than 10 to 12 feet should not be under way after dark anywhere within these islands. There is also a bank with 5 fathoms, or perhaps less, at 11 miles S.E. from the island.

**Diyîna** is a low flat sandy island, with scanty grass on it; the highest part is a black detached rock, one of several situated at the north end, about 9 feet above high water. It is  $1\frac{1}{2}$  miles long N.N.W. and S.S.E., only one third of a mile broad, and visible 6 to 7 miles. The reef extends one third of a mile off, except at the south end. The west side of the reef has 20 fathoms within a very short distance. This island would be very difficult to make at night. There are several pearl banks with 4 and 5 fathoms to the north and east of this island, from 4 to 12 miles distant.

The anchorage is in 8 fathoms, a quarter to half a mile off the south point. The shelter is better in a shamál than would appear from the small width of the island.

**Shiráu** makes in five or six little hills or hummocks, which are nearly in one when the island bears West; they may be 30 or 40 feet high. The island, which is visible 8 miles, is very small, and there is little or no reef off it. One mile to northward is a detached small rocky pinnacle, 6 or 8 feet above the water, with 8 fathoms between it and the island. At 6 miles N.W. of this island is a one-fathom patch on a large pearl bank. If standing towards the island from the northward, it should not be brought to bear to the eastward of South after sighting it.

**Dalma** island is about  $4\frac{1}{2}$  miles long North and South, by  $2\frac{1}{2}$  broad; it is hilly; the south low point or plain is  $1\frac{1}{2}$  miles long and very low. The hills at a distance appear like a long table hill, with a small barn-shaped peak on it near the north end; this is 244 feet high, and visible 18 miles. There is a little village and tower, with about 15 families, on the west coast of the plain. There is plenty of brackish water in wells, and many goats are kept which feed on the scanty herbage. The island is much visited by the pearl boats on account of the water, and during the season there is a large stationary population, who supply necessities to the boats and establish a kind of bazaar here. The reef round it extends a quarter to half a mile off shore, except at the south point.

Low South point is in latitude  $24^{\circ}27'33''$  N. and longitude  $52^{\circ}19'12''$  E.

The water is rather deep, 16 to 20 fathoms, close to Dalma, except on the south side, between it and the main.

**Anchorage.**—On the east side in 10 fathoms, three-quarters to one mile off the low sandy plain, where there is good shelter in a shamál. The native boats lie on the west side off the village, quite close to the reef, where they are sheltered from the shamál by the south-west point of the island, and a little point of the reef off it, and are also safe if a nashí came on.

**Hálat Másuma** is a small sandy islet (2 or 3 feet above high water),  $2\frac{1}{3}$  miles S. by E. from the south point of Dalma; it lies on a reef, which extends one mile round it, and has 9 fathoms close-to. There is a boat passage between the reef and Dalma; it is narrow, and has not more than 3 fathoms, which is quite close to Dalma; the tide sets strong through it.

**SIR BENI YAS to AL WAKRA.**—The coast continues to be most difficult to approach; the sea is full of shoals and shoal patches; there are so many of these that the most minute survey,

which the present one is not, might fail to detect all, so that a good look-out is everywhere necessary. The great detached reefs lying off the coast have been but roughly delineated, especially the outer edges. There are many small islands, all low, off the coast.

The extent and configuration of the seaward face of the reefs are almost unknown; being out of sight of land, and having, as far as is known, no practicable channel through them, no vessel requires to approach them, and should avoid doing so. The Arabs do not visit their neighbourhood in any vessel larger than pearl boats, and sail through or over the great reefs guided by the eye.

Outside these reefs the sea westward of a line from Dalma to Shiráu has been imperfectly explored; it is full of overfalls, and if a vessel stand west of that line it should be done with great caution.

**Zábút island** bears S.W.  $\frac{1}{2}$  W. from the south point of Sir Beni Yas, distant 12 miles; it has white cliffs, and looks like a sail when first seen; it is visible 13 or 14 miles, and is close to the mainland; there is no passage behind it.

The reef extends 7 or 8 miles northward and north-eastward of the island, and to the west and north-westward of it are two shoal patches; there is also a large space of unsounded ground in this direction, where it is probable there are many pearl banks, so that it would not be desirable to approach this island nearer than 8 miles, except with great caution.

**Jebel Baráka**, 200 to 300 feet high, is near the sea coast, with a low cliff on the shore under it; and **Jebel al Wataid**, a smaller hill about 7 miles to south-westward of it, is 2 miles from the coast. The low ranges of dark hills extending along shore from **Khor al Bazim** terminate at this place, and a very low coast begins, which extends for 25 miles to westward, and is called **Subákha**, or the salt ground, from the efflorescence caused by the evaporation of sea water. It is partly swampy, and a most desolate bit of coast; it is the southernmost part of the Persian gulf, being partly south of the parallel of  $24^{\circ}$ . The Arabs say this is in summer the hottest place in the gulf. It is difficult to approach, or even to sight, the foul ground extending from 4 to 6 miles off it. A small point near the southernmost bight is called **Ras Assák**.

**Yasát** (also called in the singular **Yas**), a group of low level islands, with cliffs all round, covered on the top with coarse grass; about 15 feet above the sea, and visible 7 miles. The group extends about 6 miles North and South, without any passage through it; it consists of two islands, and three little islets to the south of them.

The northern island is the larger, being 3 miles long by  $1\frac{1}{2}$  broad. A great reef extends off it to north-eastward for 5 miles, or more; and the chain of reefs is continuous, with no known channel fit for a ship, from these islands, for 60 miles to northward.

**The Anchorage** is with south islet bearing East to E.N.E. a quarter to half a mile. In rounding the South islet, look out for a small spit on the south-east side, and a little shoal patch, about a mile W.N.W. of it. There is a clear channel 4 miles wide, south of this islet, with irregular soundings of 5 to 20 fathoms; the mainland is 8 miles distant, and the reef extends 4 miles off it, so that the land is not in sight when close to the edge. East of these islands, as far as Zábut, the soundings are incomplete; there are great overfalls. At 6 miles S.W. of Hálat Másuma is a bank, passing over which the *Marie* had 3 fathoms.

West of these islands, as far as al Odaid, the survey is more complete; but even here the *Marie* found three new patches while sailing through.

**Mahamaliyya**, a small islet, of light colour, 15 to 20 feet high, visible 7 miles; it is flat-topped, with a notch in it, and cliffs all round. There is a little detached patch, one mile to the south-eastward, but no reef at the islet. The channel north of this islet is best. It bears W.S.W.  $5\frac{3}{4}$  miles from Yas south islet.

**Umm al Hatab**, a low sandy island, about half a mile in extent, with tufts of coarse grass, is visible only 4 or 5 miles. It lies on a rocky reef, and there are several rocks above water off the north end; the reef extends half a mile off on the east and west sides, but the south side is clear of danger. It is N.W. by W.  $\frac{1}{2}$  W., 8 miles from Yas south islet.

**Ras as Silla**, a slightly projecting point, just where the coast changes its direction to north and south, at the western end of that low part called Subákha. Here is the beginning of higher land, rising gradually from the sea to 100 feet or more; the summit is quite level, and the high ground terminates to seaward in a series of little terraces or steps. It is of light colour, and sometimes has a sparkling appearance in the sun, from fragments of crystals which lie about on its surface.

A little north of this point are some wells near the shore, but the water is brackish. The shore is safe to approach to half a mile, the great reef off Subákha beginning 3 or 4 miles to the eastward of this point.

**Kassár al Bayya** is a rock above water on the shore reef, about 3 miles North of the wells. The coast runs North 13 miles from Ras as Silla, and then turns north-westward for  $2\frac{1}{2}$  miles to Ras Masheirib, the reef extending from half to three-quarters of a mile off shore. There are 10 to 12 fathoms close to this shore reef, the water slightly deepening when approaching it.

**Naíta**, a low sandy islet, with several detached rocks off the north end, and stunted tufts of grass on it; there are a few graves, probably of fishermen, as on many of these islands. The islet is under half a mile long, and very narrow.

It lies on the western edge of a great reef, which appears to join that extending off Yasát islands, although there are, doubtless, boat channels through it. A spit extends a mile S.S.E. of the island, between which and the reef off the opposite point of the main is the entrance of the strait, only two-thirds of a mile wide. The soundings in the bay, South of Naíta and Yasát, are uneven, with overfalls of 3 or 4 fathoms; the bottom in the deeper parts is mud, and on the shoaler spots rock or sand.

There is a conspicuous little table hill (75 feet) on the main, S.W. of Naíta, at the point where the coast turns to north-west; and to the southward of this is a succession of small points (low cliffs) and bays, towards Ras as Silla. From Table hill point there is a range of low white cliffs for one mile to north-westward, after which the coast becomes low towards Ras Masheirib, which is a very low and rocky shelving point.

**Naíta strait** is  $3\frac{1}{2}$  miles long, and narrowest at the south entrance. It appears to be the only safe way to get to the northward along shore. The channel is on the Naíta side, and has only 4 fathoms in one part. While passing Naíta look out for a spit extending off the main, nearly half-way across; after passing that islet the strait is wider. Foul ground extends nearly a mile to northward of Ras Masheirib; a vessel should, therefore, not stand too close past it. The tides are strong in the strait, the flood setting to north-westward.

**Al Fazáya** island is  $2\frac{1}{2}$  miles long North and South; it is of light colour (like all this part of the coast), has low cliffs all round, and is about 50 feet high, and level on top. It lies off a long point of land, separating two deep inlets, to be next described. Its north point bears W.N.W., 5 miles from Ras Masheirib. There is no passage between it and the main.

**Dúhat an Nakhla** is an inlet, about 5 miles in depth North and South, between Fazáya and Ras Masheirib; it has 3 to 5 fathoms in it, and its width is contracted by the reef off each side of it, to an average of half a mile; there are one or two shoal patches in the entrance rendering it not suitable for shipping.

**Dúhat al Kawaisát** is a finer inlet than the last; the entrance is on the west side of Fazáya island. It is 7 miles long nearly North and South, and 2 miles wide inside; the entrance, which has 3 fathoms in it, being contracted by small reefs projecting off both sides of it.\* There are 6 fathoms inside.

**RAS AL HAZRA** resembles in appearance Ras Masheirib, from which it bears N.W. by W.  $\frac{1}{2}$  W. 10 miles; on its east side are several rocky islets on the shore reef, which extends half a mile off shore, as far as the entrance of Kawaisát cove. The coast at this point turns to W.S.W. for 15 miles, forming a great bay between this point and Ras Bu Kamheiz. This bay has not been visited since the survey in 1823; it contains many shoal patches; soundings are all under 10 fathoms, generally mud. The shores are low white hills, except at the head, which is low.

**Fareiját** is a name given to two little islets (20 to 25 feet), 2 miles apart, bearing E.  $\frac{1}{4}$  N. and E. by N.  $\frac{3}{4}$  N. from Ras al Hazra  $6\frac{1}{2}$  and 7 miles. They are table-topped, of light colour, and visible 7 or 8 miles. They are in one when N.N.W. and S.S.E. A reef extends  $1\frac{1}{2}$  miles west of the southern islet and S.E. by S. 4 miles from it is a detached patch, nearly dry.

**GHÁRA** is a group of rocky islands lying 2 miles N.W. of Ras al Hazra. It is 3 miles in extent, and consists of one island, about a mile across, and numerous smaller ones. They are low and flat on top. Three miles north of this group is an extensive patch of foul ground.

**RAS BU KAMHEIZ**, the east, low rocky point of the promontory forming the south side of Khor al Odaid, has a reef, named Fasht umm Janna, extending 3 miles east of it. The reef is 2 miles broad, has 10 to 15 fathoms close-to, and there is a small channel inside it, close to the point. From hence the coast runs S.W. and South 20 miles, to the bottom of the great bay west of Ras al Hazra.

At 4 miles N.W.  $\frac{1}{2}$  W. from Ras Bu Kamheiz is a point of low cliff, just outside the entrance of Khor al Odaid, which has two hills behind it, called Jebel al Odaid. The north-eastern (190 feet) rises

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\* Captain Brucks says only 40 yards wide at one part.

over the point, is of light colour, and has a table-top, with several scollops in it; the other (300 feet) is  $1\frac{1}{2}$  miles to south-westward, and is visible about 17 miles. A reef extends half a mile North and one mile East from this point. The south, low rocky entrance point of the khor is  $2\frac{1}{2}$  miles W.  $\frac{3}{4}$  N. from this point; and there is a sandy beach between, on which once stood a village; there are still three wells of tolerable water and some ruins.\* There are three rocks on the south side of the channel, half a mile east of this point.

Three other little rocks lie on the edge of the reef, half a mile N.W. of this point, close to the northward of which is the channel leading to the Khor, which has only one fathom in it at low water, and is narrow. On the north side of this channel is a shoal about a mile in extent, with deep water between it and the opposite shore; but no passage into the khor to the north of it.

**Khor al Odaid** is a winding inlet, 5 miles in length, opening out inside to a lagoon, about 5 miles long and 3 broad. Its average direction is S.W.; the south shore being a continuation of the rocky hills of Jebel al Odaid; while the north coast and shores of the lagoon are of perfectly white, round shaped sand-hills, 50 to 80 feet high, without any vegetation.

The average width of the khor is half a mile, but the channel is contracted by banks and rocky islets to about half that width; depths in it from 2 to 4 fathoms. The lagoon is shallow at the entrance and south end, but has 6 and 7 fathoms at the north end. The water in the inlet and lagoon is of a beautiful blue colour, and very clear. Khor al Odaid is frequented in the winter by Abu Thabi fishermen, who remain some months. Very fine mullet are caught there.

The anchorage off the entrance is close to the north shore, just inside a slightly-projecting sandy point (which has no reef off it), 2 cables off shore, in 6 to 10 fathoms, sand and shells: outer hill bearing S. by E., and having the detached middle ground shoal, mentioned above, south of the vessel. It is difficult to estimate your distance off the white sand-hills; they look farther off than they really are. This anchorage is sheltered in a shamál, and in a nashi there is not very much sea, owing to the great reefs to seaward.

**Directions.**—Approaching this place from the southward, steer North from Ras al Hazra, or work up, making short tacks between the shoal lying N.N.E. of that cape and Ghára islands, with the shoal north of them, looking out for any patches that may exist

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\* This place being the boundary of the territory claimed by the Abu Thabi and Bahrain chiefs, much jealousy existed about it, which led to the settlement being abandoned.

not marked on the chart. Jebel al Odaid will be sighted after passing Ras al Hazra ; when the outer hill bears W. by S., you are clear of Umm Janna shoal, which shows well and is deep-to ; in hauling in for the anchorage, keep rather to the northward to avoid the outer end of the middle ground shoal.

To the northward of this place great care is required, while south of Fasht al Arrif : the sea is full of shoal patches, but the coast appears clear of reef. In particular, there is a small one-fathom patch in the fairway 4 miles N.N.E. of Jebel al Odaid. There are doubtless more of these patches than have been discovered, but a good look-out will always enable a vessel to avoid them. No vessel ought to navigate with the sun ahead, and too much attention cannot be paid to the look-out.

**Kafái**, a low island with tufts of grass, visible 4 or 5 miles, and about 2 miles across, lies 12 miles east of Ras Bu Kamheiz. A shoal extends 2 or 3 miles to the south of it, and N.N.W.,  $4\frac{1}{4}$  miles from it, is a reef which has not been explored, and may be connected with the island. Three miles south of Kafái are two very low islands, extending together about 3 miles North and South, called Miyamát-entin, lying on a great reef which extends 5 miles to the southward, as far as the islands Fareiját.

Outside Miyamát, for a distance of 15 miles, the sea is said to be full of shoals, with no passage between them, but it has not been examined.

**Najhân.**—From the north entrance point of Khor al Odaid the coast runs nearly straight, N.N.E., for 18 miles. It is all of high white sand-hills, like those on the north side of that khor, and is called Najhân ; there is no shore reef off it.

**Jezírat Las hát**, a group of small rocky islets, flat-topped, with light-coloured cliffs, about 15 feet high, and visible 6 miles. It consists of two islets, a mile apart, and several detached rocks ; the western islet is N.E.  $\frac{1}{2}$  E.  $11\frac{3}{4}$  miles from Jebel al Odaid.

At  $2\frac{1}{2}$  miles S.S.W. of Las hát islands is a shoal ridge 2 miles in extent North and South, with only one fathom on it in parts. About 4 miles N.E. of this group is a bank of white sand, barely covered at high water, and 2 miles N.W. of this bank, a shoal nearly dry.

**Machásib**, a little flat rocky islet, 6 to 8 feet high, with a reef round it extending a mile off, and visible about 5 miles. It is 14 miles E.S.E. from Las hát. There is a clear channel, about 3 miles wide, with great overfalls, between it and Fasht al Odaid.



**Hálat Dálma** is a small sand-bank, nearly, if not quite, covered at high water, visible only 3 or 4 miles. It bears N.E. by E.,  $11\frac{1}{2}$  miles from Machásib. It lies on an extensive reef, whose limits are not determined, except on the west side, where it only extends one mile off the sand-bank. There is no safe channel for a ship through the reefs south of the islet, and it is doubtful whether there is one north of it. The sea face of this reef is not at all determined, and the sea east of it is nearly unexplored so far as the meridian of Diyína island.

**FASHT AL ODAID** is an extensive reef E.N.E. from Las hát, its western edge being 9 miles distant from those islets. It is nearly dry in parts, and extends about 10 miles North and South, by 6 in width.

**FASHT AL ARRÍF**, a very dangerous reef extending 7 miles off shore to south-eastward, in a long narrow spit, so that the shore is rarely visible when off its point. It shows well by day, and is very steep-to. The tides set strong across this reef, rendering great care requisite in passing it. The channel between it and Fasht al Odaid is only  $3\frac{1}{2}$  miles wide, and is the best one by which to approach al Odaid. Its outer tip bears N.E.  $\frac{1}{2}$  N., 22 miles from Jebel al Odaid, and from Las hát, N.N.E.  $\frac{1}{2}$  E., 10 miles. Its outer edge bears S. by E.  $\frac{1}{2}$  E., 16 miles from Jebel Wakra, which hill is seen from aloft nearly as far down as the point of the reef.

**Jezírat Mishíryat**, a little low islet on the Fasht al Arrif, 5 miles W.N.W. from the south-east tip of the reef, and opposite the northern point of the Najhán range of sand-hills: there is a channel  $1\frac{1}{2}$  miles in width between them and the islet, leading to an extensive backwater, which has not been examined. The north entrance point of this backwater, 2 miles North of the islet, was called by Captain Guy Ras al Allach; it is at this point that Fasht al Arrif is connected with the shore.

From this point the shore runs nearly North and South 17 miles to the entrance of al Bidaa harbour; it is all low, sandy, or stony desert, as far as Jebel Wakra, the shore reef extending off from  $1\frac{1}{2}$  to 2 miles.

**Umm al Hul** is a small low point,  $3\frac{1}{2}$  miles South of Jebel Wakra, projecting but slightly from the line of coast. The width of the clear channel between this part of the coast and the outlying reefs has not been accurately determined, but is from 6 to 7 miles. The soundings are pretty regular in the channel, 6 to 10 fathoms. In working up or down, a vessel should not stand too far on the off-

shore tack, about this part. From Fasht al Odaid, shoals extend, without any known channel through them, for 20 miles to the northward, ending nearly in the latitude of al Bidaa. They consist of shoal patches, with deep water between, and the breadth of the foul ground is from 10 to 15 miles; these reefs are called Rak Kareinein, and are said to be dry in parts at low water. Captain Brucks says, there is an outlying patch\* of these shoals, with  $1\frac{1}{2}$  fathoms on it, about 12 miles East of al Bidaa, which has not been fixed: the *Marie* sailed twice over the assigned position, without finding it. This would be the northernmost of the outlying dangers on this coast.

**AL WAKRA to RAS RAKKIN.**—The coast is all low, except at al Bidaa, where there is some slightly elevated rocky ground, and a few hillocks in different other parts; it is chiefly stony desert, the northern part being very low. The chain of outlying reefs extending all the way from Yasát islands, ends at al Bidaa, and the sea above that place is clear of danger; but the shore reefs extend, in places, as much as 9 or 10 miles off shore, so that the bottom is seen under the vessel before the land is made. The coast north of al Odaid is called Bar al Katr, which name applies to the whole of the peninsula. It is now claimed by the Turkish Government. The towns of Katr send 200 boats to the pearl fishery, chiefly from al Bidaa and Wakra. It is inhabited by many different tribes of Bedawin, of whom the al Manásir bear a bad character.

The tides set North and South along the coast, but not very strong; the flood sets to the southward.

**AL WAKRA**, a town rebuilt since the first survey, and a very rising place, is close to the beach, and has 12 towers. It may have 1,000 inhabitants, and many boats belong to it. It is now under Turkish Government. One mile to the southward, close to the shore, stands a little hill called Jebel Wakra, 85 feet in height; it is a level-topped rocky hill, of brown colour, visible 12 miles. The town may be approached to about 2 miles. Native boats run close up to the town at high water, either through or over the reef. A vessel would have to anchor 2 to  $2\frac{1}{2}$  miles off shore, in 4 fathoms.

**AL BIDAA, and DOHA**, are two large towns close together, situated in a deep bay, the reefs off which make it a natural harbour. The land on the west side of the bay is 40 to 50 feet high, and a stony desert, quite level on the top; the south-east point of the bay is quite low.†

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\* This may be the patch discovered by H.M.S. *Beacon*. See page 124.

† See Admiralty plan on Persian gulf chart, No. 2,837 b.

Approaching from seaward, the high towers of al Bidaa, one in particular, will be seen before the land; if too far to the southward, Jebel Wakra would be first seen. The towers of al Bidaa are seen 8 or 9 miles, or not till in 4 to  $3\frac{1}{2}$  fathoms.

**Ras Abul Mushút** is the low, sandy, south-east point of al Bidaa bay,  $6\frac{1}{2}$  miles north of Wakra. From this point the coast runs for 5 miles to the bottom of the bay, on an average W. by N. East of it the shore reef projects only one mile.

**Ras Bu Abút** is a low point in the bay,  $2\frac{1}{3}$  miles W.N.W. from the last. Off it there is little reef, but between it and Abul Mushút a great reef projects for 2 miles to the northward, forming the south side of the entrance to the harbour; it is chiefly rocky, and has only a few feet on it at low water.

The entrance to the harbour, north of this reef, is only one-third of a mile broad, for half a mile of its length, with  $3\frac{1}{2}$  and  $4\frac{1}{2}$  fathoms in it.

The northern reef projects to south-eastward  $1\frac{1}{2}$  miles, from a low sandy island with grass on it, called Jezírat as Sufla.† This reef is chiefly of sand, and, outside the entrance, trends to north-east and northward, extending for some miles. Sufla island is narrow, and about a mile long East and West; it bears N. by E. 3 miles from Ras Bu Abút. Within the entrance the harbour opens out into a basin about 3 miles in extent, with soundings from 3 to 5 fathoms, quite regular, over a bottom of white mud or clay.

**Jezírat al Ali†** is a small island of a brown colour, with a little peak at its east end, lying  $3\frac{1}{2}$  miles North of Sufla; it is visible 6 or 7 miles. There is a little basin with deep water between these two islands. The peak is useful as a mark entering the harbour.

**Ras Nessa** is a low projecting rocky point in the harbour with a fort on it having nine towers, W.  $\frac{1}{2}$  S.  $1\frac{1}{2}$  miles from Bu Abút, with a small bay between them; a spit runs off 600 yards to the northward, which is nearly dry at the end at low water. To the westward of this spit is a small bay in the reef, where the most convenient anchorage is, for communication with the towns; there are several shoal patches in it, which show plainly.

**Doha** is a town partly walled round, with several towers, half a mile S.W. by W. from Ras Nessa; it extends about 800 yards along the beach and now joins al Bidaa. The Shaikh's house is at a large round tower (with the flagstaff) on the beach, about the centre of the town; to the west of this tower is a small bight, where boats are hauled up to repair. The reef dries off a quarter of a mile from the shore

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† *i.e.* the lower island.

† *i.e.* the upper.

opposite this place. Between this town and al Bidaa, and almost connected with Doha, is a distinct town, called Doha as Saghira (Little Doha), which has a square fort at the south-west corner, built on the rising ground at the back of the town.

**Al Bidaa.**—There is now no open space between this town and Little Doha; the three towns together extend one mile along the coast. Bidaa is built up the side of the rising ground; there is a fort in the town, where the Shaikh's flag is shown, and two towers on the highest part of the land behind the town, one of which is the first thing seen from the sea. The fort is in latitude  $25^{\circ} 17' 28''$  N. and longitude  $51^{\circ} 31' 17''$  E. One mile and a half to south-eastward of the town is a tower near the wells, with a little cultivation; with this exception the whole country is desert.

The Shaikh or Kaim Makam of al Bidaa, who is under the Turkish Government, has some authority over the chiefs of the other two towns. The three towns together may contain 5,000, inhabitants of mixed tribes. They are constantly at feud with the Bedawin, and it is not safe to be outside the walls after dark. There is a Turkish garrison in the fort.

**Supplies.**—Water is dear and indifferent; the best is brought in skins from the desert, some distance from the town. There are few supplies. Firewood is brought from the interior, and also from Clarence strait. They have no large baghalas, but many pearl boats, and the inhabitants are all employed in the pearl fishery.

**Tides.**—The high water, at full and change, is about 7h. 0m., springs rise about 6 feet. The tides are not well made out at this place.

**Draught.**—The maximum draught should not exceed 15 feet at high water or 12 feet at low water.

**DIRECTIONS.**—A vessel coming from the northward could not sight the Katr coast south of Ras Laffán; she should stand down the coast in a line of between 5 and 7 fathoms till Jebel Wakra bears by account S.W., when she should haul in for it, keeping a good look-out for the \*9-feet patch discovered by H.M.S. *Beacon* in 1880, from which al Bidaa bears about W.  $\frac{1}{2}$  S., distant 9 miles, and also for any other dangers, till in 3 or 4 fathoms, outside which depth the town will not be seen. If coming from the north-eastward or south-eastward, she had better take a departure from Halúl island, which is visible 14 miles, and should be kept, while in sight N.E. by E.  $\frac{3}{4}$  E. When al Bidaa is seen, it should be brought to bear W. by N., before hauling in, in order to get the deepest water. There is an extensive flat outside the entrance to the harbour extending 4 miles beyond the reefs; it has 6 fathoms close to, and there

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\* Probably a detached outlying bank.

are 3 and  $2\frac{1}{4}$  fathoms all over it ; bottom white sand. This is the principal difficulty for a vessel to get over. A vessel not drawing more than 14 feet should bring the largest tower W.S.W., which will lead in between the reefs.

**To enter the Harbour.**—This will be easiest done in the forenoon ; it is very difficult to see the reefs when entering the harbour in the afternoon, or leaving it in the forenoon. After bringing the tower W., or W. by N. for a large ship, the southern reef should be skirted with caution, and a large vessel should anchor for the tide about  $2\frac{1}{2}$  miles N.E. of Ras abul Mushút, and send boats to buoy the entrance. A small vessel might proceed in at low water guided by the eye and lead ; the reefs will then be seen more clearly. The shoalest part to be passed over appears to be outside the opening between the reefs, or with Jebel Wakra open outside Ras abul Mushút, the south-east point of al Bidaa bay. The channel will be plainly seen from aloft ; the northern shoal light green, the southern with patches of dark colour. When fairly in the narrow part of the channel the water deepens to 4 and  $4\frac{1}{2}$  fathoms, and the difficulty is over. It is advisable for a sailing vessel to hug the weather reef, so that if you shoal suddenly you may be sure which side of the channel you are on. There is deeper water nearer the southern reef. When the peak of Jezirat al Ali is shut in behind Sufia island you are clear of the reefs, and may steer for al Bidaa (the right hand town) across the bay, which is quite clear of danger outside Ras Nessa. The soundings decrease regularly from 5 fathoms just inside the entrance to  $3\frac{1}{2}$  opposite Ras Nessa, which point will be seen in front of a part of Doha town. When Ras Nessa bears South look out for the point of the spit off it ; if you bring Doha large round tower on the beach S.W. by S. before bringing this point to bear South, you will be well clear of it. When past Nessa spit haul in for Doha, and anchor in 3 fathoms, outside the native vessels, with Doha flagstaff tower S.S.W.  $\frac{1}{2}$  W., and a little over half a mile off shore. With this tower S. by W.  $\frac{1}{4}$  W., you would be on the edge of several shoal patches on the western side of the bay, beyond which all is shoal. It would hardly be practicable to work through the narrow part of the channel : there is often a land wind early in the morning, but it would not be felt out of sight of the coast.

From al Bidaa, the coast of the bay turns to north, and shoal water extends a mile off the beach ; about 2 miles North of the anchorage, there is an opening in the reef leading into a basin, about west of Sufia island, with 3 fathoms in it.

North of Jezírat al Ali is a little bight in the reef communicating with the basin on its south side, already mentioned; and 5 miles N.N.W. of the island is Ras al Kateifán, a point of the mainland projecting very little, and slightly elevated, being visible 8 or 9 miles.

For 17 miles North of this point, the shore reef extends from 5 to 7 miles off shore, with some outlying patches of  $2\frac{1}{2}$  fathoms 9 miles off; it projects farthest in lat.  $25^{\circ} 32'$ . Some of the sand-banks near the edge of this reef are dry at low water.

**Ras an Nuf**, a low rocky point; between this and the last is a slight bay, about 10 miles across, called Dúhat Lúsail; it is all shallow, but is frequented by the pearl boats, which run in over the reef for shelter in shamáls.

**RAS MATBAKH** is a point 3 miles N.N.E. of the last; between them is the entrance to a small creek and backwater, called Khor Shajíj; the entrance to which has only one fathom at low water. A small village with several towers has been established here. The 3 fathoms line is 4 miles off this point, under which depth there is foul ground; there is a dry sand bank, 3 miles E. by S. of the point. Khor al Dhakíra, which is also shoal, is another little creek,  $3\frac{1}{2}$  miles North of Matbakh.

**Shoals.**—Between  $25^{\circ} 41' N.$  and  $25^{\circ} 47' N.$  Lat., 6 miles off shore in the neighbourhood of Ras Matbakh, a series of shoal patches were observed from H.M.S. *Beacon*. These shoals had apparently 4 or 5 feet water on them, and from 16 to 20 feet inside; they are easily seen during daylight; and the lead gives plenty of warning. As the shore is very low, the distance off may have been over estimated, as it is not visible from the deck more than 4 or 5 miles.

**RAS LAFFÁN** is a very low sandy point, 23 miles S.E.  $\frac{1}{2}$  S. from Ras Rakkin; there is a little reef off it; at this point the coast changes its direction, and runs to north-westward as far as Ras Rakkin.

**Al Howeila** is a small town and fort 6 miles W.N.W. of Ras Laffán. The coast makes a small bay here, in which the reef extends  $1\frac{1}{2}$  miles off shore. It has a square fort visible 8 miles. The people are employed in the pearl fishery. In 1887 the place was found to be deserted. The north point of the little bay is called Ras al Marína, close to the southward of which the pearl boats find shelter during a shamál.

**Fuairit**, a small walled town with several towers, 12 miles N.W. of Ras Laffán, standing on a small khor; it has some white sand-hills immediately to the northward of it. The people of these towns are of the Al Bu Kawára tribe. At about 4 miles north of this place

a small village with several towers has been established by people from Wakra, and called al Ghareya. A small village with several towers, called ar Ríyat, now stands about 2 miles north of Fuairit, and just to northward of the sand hills.

**Ras Umm al Hasa** is a point 8 miles S.E. of Ras Rakkin ; a small rocky hillock stands on it, visible about 5 miles ; the reef extends about a mile off shore. Close under this point is shelter for boats in a shamál. Shoal water is reported off this point

**RAS RAKKIN** is the north-west point of a T-shaped island, and the north extreme of the peninsula of Katr, in latitude  $26^{\circ} 10' 55''$  N. and longitude  $51^{\circ} 12' 54''$  E. It is very low, and has tufts of grass on it, and some small mangroves on the south side ; it is 2 miles in length nearly East and West, and very narrow ; the reef extends off it one to  $1\frac{1}{2}$  miles. Between the island and the main is a shallow strait  $1\frac{1}{4}$  miles broad, mostly dry at low water, into which boats run for shelter. At  $4\frac{1}{2}$  miles S.E. by E. from Ras Rakkin is a small mound on the mainland, only visible 5 miles. No kind of vegetation is to be seen on the coast. North of this cape, 5 fathoms are  $2\frac{1}{2}$  miles off, and the soundings decrease pretty regularly towards the reef.

The bottom between this point and al Bidaa, is white sand or rock near the shore, and shows well in the clear water.

**Ar Ruweis** is a small town on the main,  $2\frac{1}{2}$  miles South of Ras Rakkin ; it has four towers on the fort, which is the first thing seen from the northward when making the land. They have many boats, which run in over the reef, and anchor in shelter close to the beach. The fort is visible 6 or 7 miles.

**HALÚL ISLAND** lies 72 miles S.E. by E.  $\frac{1}{2}$  E. from Ras Rakkin ; it is barely one mile across, and is hilly ; its highest peak being 180 feet, and visible 14 to 15 miles. It cannot well be mistaken, being so far from all the other islands ; there is a little reef round it extending nowhere more than  $1\frac{1}{2}$  to 2 cables off shore. The best anchorage is on the south-east side in 8 fathoms, half a mile off shore, but much swell rolls round the island in a shamál. There is a good landing place, where there is very little reef, in a gap in the low cliff, to the left of a small sandy beach on the south-east side, which is in latitude  $25^{\circ} 40' 12''$  N. and longitude  $52^{\circ} 24' 55''$  E. The island is quite barren, and there is no water ; it is visited by the pearl boats.

The soundings are not much guide approaching this island ; there are great overfalls everywhere round it ; 14 fathoms are about a mile off. The edge of the pearl bank is just outside this island.

The dangerous Shah Allum shoal, with 15 feet water on it, is 45 miles N.  $\frac{1}{2}$  E. of this island (*see* page 257).

## CHAPTER VI.

SOUTH SIDE OF PERSIAN GULF.—RAS RAKKIN TO  
BUBIYÁN ISLAND (END OF ARAB COAST).

VARIATION, 0° 50' West in 1890.

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**GENERAL OBSERVATIONS.**—The coast the whole way continues a low, sandy, or stony desert, with a few little hills now and then. The only vegetation, except near al Katíf, and one or two other towns, where there are date trees, is the coarse grass growing in tufts on the sand-hills and small brushwood in parts. It is fronted by extensive reefs till within 70 miles of Kuwait; and many islets, all, except Bahrain, small and low, lie off it at considerable distances. Excepting some of the towns, it is never visited by Europeans. Large tracts of the coast are without towns or fixed inhabitants, and it would not be safe to land on the main, away from the towns, without an armed party.

**Tides.**—The time of high water, full and change, varies from about 5h. p.m. at Ras Rakkin, to 0h. 15m. at Kuwait; rise and fall, 6 to 9 feet: the stream is felt everywhere on the Pearl bank, especially round reefs and islands, &c. The flood-stream sets from Rakkin along the coast to the southward; near Ras Tannúra it seems to split, running to north-westward towards Kuwait, and to southward into Dúhat Salwa. It also sets to the south along the Díbal shoal. *See* page 21.

Off Bahrain harbour and amongst the outlying reefs the tidal streams are very erratic and much affected by the winds, but to a certain extent they follow the direction of the reefs, at springs reaching a strength of from 2 to 3 knots.

High water at Bahrain, full and change, at 6h. 10m. During the winter months the average rise of tide at springs is 6 feet, but in the summer the south-west monsoon, driving the water into the gulf, raises the level of the sea about one foot, and the range of tide is then greater. As a rule south-east winds raise the general level of the water, and north-west winds lower it. Neaps rise 4½ feet.

**The flood**, coming in from the north-eastward, runs south along the east side of Fasht al Yárim until abreast of Ras al Ain; when,



joining the stream flowing west along the north edge of the Khaseifa reef, it turns south-west into the harbour. Northward of Fasht al Yárim, and across the eastern part of the Shaikh Gata bank, the flood flows south-west, turning to south along the west side of Fasht al Yárim to within one mile of that bank and 2 miles of Najwa, and south-east between Fasht al Yárim and Khor Fasht, in the Khor al Bab channel, but westward of and over Khor Fasht it sets south.

Over Khaura bank the flood sets to the southward, and to the south-west between Chaschús and Najwa reefs.

The southern edges of the Khaura and Shaikh Gata banks are marked by overfalls.

The flood also sets south-eastward between Maharrak and Bahrain islands. It sets to the southward outside Maharrak island. Its velocity in the harbour is from 1 to 2 knots.

The ebb runs over and between the several reefs in the opposite directions to those ascribed to the flood.

**RAS RAKKIN to RAS TANNÚRA.** *General Description.*—The coast forms a bay 60 miles broad, between these points, and 80 miles long, North and South; in which lie the large and fertile islands called Bahrain. South of the parallel of  $26^{\circ}$ , this bay is only very cursorily explored; it is much blocked up by shoals, and the channels are intricate.\* The coast runs from Ras Rakkin, about S.S.W. 70 miles to the bottom of this bay: it forms the west coast of the Katr peninsula. Any vessel visiting this coast south of Ras Rakkin must exercise the utmost caution.

**RAS BU AMRAN** is a low point S.W. by S.  $2\frac{1}{2}$  miles from Ras Rakkin; the coast line trends E. by N. 5 miles; and S.W. for 8 miles, past Khor Hassán. The shore reef extends off this point to the north-west 2 miles; but in a westerly direction 4 miles; and  $1\frac{1}{2}$  miles S.S.W. from it, is the village and fort of Abu Tharúf.

**Khor Hassán**, a small town and fort on the coast,  $9\frac{1}{2}$  miles S.W. of Ras Rakkin.† Between this place and Abu Tharúf are two little villages on the coast: Al Yúsufiyya, 3 miles; and al Yamíl, 4 miles from Khor Hassán. Three miles southward of Khor Hassán is the little village of Faríha.

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\* The authors did not visit any part of the bay south of the parallel of Ras Rakkin, and the account in Capt. Brucks' Memoir, from which this description of that part is chiefly compiled, is very meagre.

† It was the seat of the pirate chief Rahma Bin Jábír, who blew his vessel up in action, in 1826.

The shore reef extends quite 2 miles off at this part, and there is a 4 fathoms channel, about 8 miles broad, between the reef and the Díbal shoal.

**FASHT AD DÍBAL** is a shoal about 5 miles in length North and South, by  $2\frac{1}{2}$  broad, dry in parts at low water; its northern edge is W. by N.  $\frac{1}{2}$  N. 17 miles from Ras Rakkin. Two miles south-westward, and separated from it by a 3 fathoms channel, is a smaller shoal called Jaráda. Boats find shelter to leeward of these shoals in shamáls. West of the Díbal there is a channel, 10 to 12 miles wide, between it and Bahrain island, with 7 fathoms; but to south-westward of this shoal the sea has not been sounded; and there are said to be numerous shoals in that vicinity.

The soundings north of this shoal between Ras Rakkin and Bahrain are reported to be a fathom less than shown on the chart.

**RAS ASHÍRAJ** is a low rocky point, 16 miles S.W. of Ras Rakkin, to the eastward of which is a bay  $1\frac{1}{2}$  miles deep, but shallow. On the east side of this bay stands the once important town of Zubára, of which extensive ruins are still to be seen; it is now abandoned, and the inhabitants have removed to Moreyr.

Vessels from Bahrain to Zubára generally sight Ras Rakkin, and then skirt the shore reef in 4 or 5 fathoms, till Khor Hassan tower is sighted. The large fort at Moreyr should then be seen; it is situated on slightly rising ground, about  $1\frac{1}{2}$  miles inland, between Zubára and Fariha. In a vessel drawing 18 feet this would be the safest course.—In the forenoon the reef is not easily seen.

At 2 miles below Ras Ashíraj is a village called ar Rubeija, the southernmost place on this coast. South of a line between this point and Bahrain island, there appears to be no more than 3 fathoms water, with numerous little shoal patches scattered about. The coast from Ashíraj runs S. by W. for 28 miles, to the bottom of a large shallow inlet called Dúhat al Adhwan; it is 9 miles in length, and the deepest water in it 2 fathoms.

On the west side of the entrance to this islet is a group of islands, little explored, the largest of which, al Hawár, is about 10 miles long, and frequented by fishermen.

There is no channel inside these islands, and outside them there is a blank in the survey, which leaves it uncertain what channel there is between them and Bahrain island.

**Ras as Sawád** is the point of the main nearest the above islands, on the west side of Dúhat al Adhwan, and from this the coast runs about 30 miles to S. by W., forming the east coast of Dúhat Salwa,

the name given to the bottom of this great bay. This coast, from some distance to northward of this point, is, by native report, of moderately elevated stony hill. The extent of Dúhat Salwa to the southward has not been exactly determined,\* and the few soundings taken in this bay show that great overfalls exist. Its west side has a north-north-west direction for about 26 miles to a point forming the south side of a bay, in which lies Jezírat Zakhnuniyya. The coast on this side of the gulf is a range of sand-hills, of which one is called Jebel Mowa (?). Zakhnuniyya is about 4 miles long, and has a village and fort on it, belonging to Bahrain. There is a shallow channel between it and the main.

**Al Ojair** is a small fort close to the sea, and the seaport of the Wahhábi, formerly a town, but now very insignificant. It is near the head of a cove, running N.N.W. about 4 miles from the north end of the bay in which Zakhnúniyya island lies. The east side of the cove is formed by a long low sandy point, the south end of which is called Ras Seiha. The entrance to the cove lies between this point and the north end of Zakhnuniyya.

The fort stands in a perfect desert ; but some water is obtained in shallow wells in the sand. From this place, the south end of Bahrain island bears about E.N.E., about 14 miles distant. From the few soundings shown on Captain Guy's chart the depths between appear irregular, over mostly soft bottom, 4 to 14 fathoms. The al Naím Bedawín, who occupy the country between this place and al Katr are reported not to be hostile to strangers, and to be the most powerful tribe in al Katr.

The coast continues from Ras Seiha about N.N.W. for 20 miles to the entrance to Dúhat Thálum, a large shallow bay, about 7 miles in extent and uninhabited. At the south side of this entrance is a sand-hill, used as a landmark, called Hamadiyya. The natives say there is a small lake of fresh water 2 or 3 miles inland of this. The north low, extreme point of the bay has a ruined fort on it, called Kureyya.

At 7 miles north of Kureyya point is a small shallow cove, called Dúhat Ain as Sih, which has a detached shoal off the entrance ; and 2 or 3 miles north of this, and about west of the north end of Bahrain island, are two hillocks called Zabánat ; they are a little back from the coast, from which the nearest part of Bahrain island is distant 10 or 11 miles. The passage between is shallow, and much blocked up by

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\* Capt. Brucks was of opinion it extended farther south than shown on the chart.

The Arabs say there are extensive ruins at the bottom of this gulf ; whether ancient or modern is not known.

reefs. Jilat al Husain is a small fort 6 miles north of these hills, inhabited by a few fishermen ; and just above it is a point called Ras Kuwákib, which bears S. by E.  $17\frac{1}{2}$  miles from Ras Tannúra, and is the south point of al Katif bay. Near the coast below al Husain is the Lailiya district, which is said to have much fresh water, and many date plantations. From this point to the bottom of Dúhat Salwa the coast has no permanent inhabitants. It is under the Wahnábi Amír, and is frequented by many Bedawín tribes, of whom little is known. A great reef extends 8 miles off Ras Kuwákib to east and north-eastward, with a dry sand-bank near its outer edge, called Chaschús. Inland, a few miles from this point, is a range of hills with two principal peaks ; the north-western is a sugar-loaf or conical hill, 416 feet high, called Mathra, bearing S. by W.  $\frac{1}{2}$  W. 17 miles from Ras Tannúra ; the other, Jebel Thahrán, a flat-topped hill, 500 feet high, 18 miles S.  $\frac{1}{2}$  W. from that point. They are visible about 23 miles.

**BAHRAIN ISLAND** (formerly called Awál) is about 27 miles in length North and South, by 10 in breadth. Towards the centre there is some slightly-elevated rocky table land, and 12 miles from the north end is a small square lump of dark hills, called Jebel Dukhán, about 400 feet high, visible 21 miles. The shores of the island are low, and along the north end is a belt, 2 or 3 miles wide, of very fertile land, with abundant fresh-water springs, and covered with date groves, &c. The principal town, al Manáma, is at the north-east corner, and is the capital of the chief of the great al Uttúb tribe. The total population of the islands was estimated at 50,000. Excepting the northern portion, great part of the island is barren, but there are many villages in different parts.

**Al Manáma**, a large town on the north-east point of the island, with perhaps 8,000 inhabitants, is built along the shore for about three-quarters of a mile ; the houses are mostly poor, the only conspicuous building being the Shaikh's house, which is a high semi-fortified building near the west end of the town, on which the flag is shown : close to the east of it is a small minaret, only seen when in the inner anchorage. The north-east point of the town, forming the left extreme, is called Ras ar Rumán ; half a mile south of this is a clump of dates behind the town standing on a little rising ground. The Shaikh's house is in latitude  $26^{\circ} 13' 50''$  N., and longitude  $50^{\circ} 34' 30''$  E.

The landing at the town, though better than at any other part of the island, is inconvenient, except at high water ; the shore reef

being very shelving, boats cannot come within a quarter of a mile of the beach at low water. Donkeys are always brought down to assist persons landing and to unload goods, &c.

There is an Arab British agent, and many Banyans are settled here. The inhabitants of this town, of Maharrak and al Hadd, are chiefly employed in the pearl fishery, to which about 300 to 400 boats are sent from these islands ; but there is a large agricultural population. Owing to the numerous springs of water on the north part of the island, which are carefully employed in irrigation, it is very fertile ; and the verdure, so unusual in this country, has a very pleasing effect. There are great numbers of fruit trees, as citrons, limes, &c. ; and very fine date plantations ; much lucerne is grown for forage. The island produces quantities of dates, which are exported to other parts of Arabia and India. The other exports are pearls and hides, a few of the finest horses in the world, and some remarkably fine asses, to India and Maskat. Cotton sail cloth of very good quality is made here for baghalas, and exported to Kuweit, al Basra, and to India. Grain, hides, mats, wool, and cattle are also exported. The only other manufactures are coarse cloth for turbans and cloaks, &c., and mats of fine texture made of the date leaf.

Some trade is carried on with India, many fine baghalas belonging to the port and some large ones are built here. They have 200 vessels from 20 to 300 tons, besides the smaller ones. The Shaikh has some fine war vessels, chiefly Batils, which are very fast sailers. The imports are rice, timber, and other materials for ship-building, and piece goods, cotton, &c., from India ; and coffee from the Red sea. Other imports, in great part re-exported, are animals and cattle, dates, fuel, grain, drugs, spices, tobacco, sugar, oil, and fuel. The gulf mail-steamers call here fortnightly on the voyage up, and now do most of the trade.

Near the ruined mosque with the two minarets are the ruins of a considerable town, much better built than the present one, called Balad al Kadím (the old town) ; there are also some well-built baths over some of the springs. It appears to have fallen off in prosperity since early times. There are still many villages on the island in different parts ; but, according to all accounts, few compared with the number formerly existing. The largest spring on the island issues from a reservoir about 30 feet deep and 30 yards across, in a stream 6 or 8 feet wide and 2 feet deep, which will give an idea of the supply of water on the island : it is about one mile south-west of the minarets.

**Supplies.**—The following are procurable: Water, in plenty and of good quality ; if you have no water casks, see that the large wooden

tank it is brought off in is clean; bullocks, sheep, and poultry, vegetables and fruit, Arab bread, flour, rice, &c., and other articles for ship's use, except biscuits, spirits, and salt meat; firewood, but not for steam purposes; teak timber for repairs, but very dear; no ironwork. A baghala's mast, of heavy wood (poon), might be got as a substitute for a broken spar.

**Portuguese Fort**, called by the natives al Kebliyya (and other names), is nearly 3 miles W.  $\frac{1}{4}$  N. from the Shaikh's house at Manáma. The Arabs know nothing of its origin. It is exceedingly dilapidated, and, within the enceinte, are the ruins of many large buildings. It stands in a gap in the date trees, 150 yards from the beach, its highest part being about 80 feet above the sea. From seaward it makes in three principal lumps of light colour; quite shapeless.

**The Coast**.—Nearly one mile N.N.W. of the Portuguese fort is a small rock on the reef, above water, to which Capt. Brucks gave the name of Lighthouse rock, from a notion that the Portuguese had one on it. The coast between this and Manáma, which forms a bay, is lined all the way with thick date-groves: one mile from Manáma is a fishing village called Nayim.

Nearly equidistant between the fort and town, and one mile from the shore, stands a large ruined mosque with two minarets. These are useful marks for the harbour, their tops being seen over the date trees, until near the inner harbour; they are not easy to make out, and are best seen from aloft over the trees.

From the Portuguese fort the coast of the island runs West,  $2\frac{1}{2}$  miles to the village of Sarábi, and S.W. by W.  $1\frac{1}{4}$  more, when it turns to the southward: at the west point is a tower and little village called al Bidía. Off the west coast, about 4 miles south-west of al Bidía point, is a large island, called Umm Nahsán; it is low, and has two small peaks on it. North of it are two islets; there appears to be no passage between these and Bahrain island.

The west coast of the island runs, in an average south direction, for 27 miles, according to the chart by Brucks, and is little known: about 10 miles South of Bidía, is a village and fort called Zalák. From Ras al Bar, the south point of the island, the coast turns to the north-east and north, and is also almost unknown. About 12 miles from Ras al Bar, are some extensive ruins, called Jau.

From Ras ar Rumán, the north-east point of the island, the coast runs to south-eastward; about three-quarters of a mile from it is a low sandy point, with the little fishing village of Hálat an Namas; beyond which it forms a bay, the south point of which, called

Ras al Jasra, is 2 miles S.E.  $\frac{1}{2}$  S. from Ras ar Rumán. There is a village and detached date grove on this point, and a fresh water spring on the beach below high water level.

At this point the coast turns to the westward, forming the north side of an extensive shallow backwater, running West about 4 miles into the island. On the south side of the entrance, which is  $1\frac{1}{2}$  miles wide, is Sitra, a large island 4 miles long North and South, and  $1\frac{1}{2}$  broad, with only a narrow shallow khor between its south side and Bahrain. Its northern half is covered with high date trees, the eastern extreme of which terminates abruptly like a cliff or bluff. There is a village and fort of the same name in the grove, and at the south end of the island is a small fishing village called Maháma. Nabbi Sáli, 2 miles S.W. from Jasra point, is a small island in the backwater about half a mile in extent, and covered with date trees. From the south point of Sitra island the coast runs in a south and south-west direction 21 miles to Ras al Bar.

**Interior.**—At 4 miles from the north coast commences some moderately elevated rocky table land (100 to 150 feet), which extends nearly across the island, and for many miles to the southward; it is terminated on all sides by little cliffs. On it, nearly 7 miles S.  $\frac{1}{2}$  W., from al Manáma, stand the village and hill fort of ar Rufaa, which has several towers, and is seen over the date trees when entering the harbour; it is sometimes difficult to make out, except from aloft, owing to the trees having grown up.

**Jebel Dukhán** is a small lump of dark hills standing near the centre of the island, about 400 feet high; it is level on top, with jagged outline, and a bluff on each side. Its centre is S.  $\frac{3}{4}$  W. nearly 12 miles from al Manáma, and in clear weather it is the first land seen from seaward.

**MAHARRAK ISLAND** lies north-eastward of Bahrain, being separated from it by a strait, in one part only a mile in breadth, and nearly all shallow. It consists of a strip of low sand, averaging half a mile in width, and of horse-shoe form, the convex side to the north; it is 3 miles in breadth East and West, and nearly 4 miles long from the north coast to the extreme south-east point. On the south-west point lies the town of Maharrak, as large and populous as al Manáma, and half a mile in length and breadth. At its south end, on a small low piece of ground, which at high water is separated from the town, stands a square fort with four towers, also called Maharrak; and a quarter of a mile E.S.E. of this is a fresh-water

spring under the sea, having always a fathom of salt water over it, from which the town is principally supplied; it is called Bu Máhir.\*

Around the north end of this island are four clumps of date trees, which are the first objects seen when making the place; unless in very clear weather, when Jebel Dukhán will be seen a little before them. They are visible 10 or 11 miles from the deck.

Each of these clumps has a name, and they are useful landmarks in entering the harbour. The western, which shuts in behind the others, when bearing S.W. by S., is called Basaitín, from a little fishing village close to it on the beach. This clump is reported as no longer existing, and the extreme of the island must be used instead. It is 2 miles North from Maharrak fort.

The other three clumps on the north side of Maharrak are all within the space of a mile. The western, called ad Dír, has a small village in it, and a little building on a hillock close to eastward of it. The centre and northernmost is called Ríya,† and the third clump Simáhi. There are a few huts at each of the last two, and a fine spring of water at Ríya.

Saya is a small islet on the shore reef, three-quarters of a mile from the beach, west of this clump. It is about 20 yards across, of light colour, and only a feet above high water level, and has a spring and basin of water on it, which is quite fresh, except when the sea gets into it at high water springs; at low water the reef around this islet is dry.

Khaseifa is a little rocky islet on the reef, about 700 yards North of ad Dír; between it and the shore are three fresh-water springs on the reef, uncovered at low tide, from which the village is supplied with water.

Kaláli, a fishing village, with a square tower on a sandy hillock, stands on a point  $1\frac{1}{2}$  miles S.E. by E. from Ríya. Three-quarters of a mile N.E. of it is an islet on the reef, with the remains of a building, and two fresh-water springs near it, which is called Arza.

From this place the strip of sand forming the island runs South for  $3\frac{1}{2}$  miles, terminating in a very low sandy point. Jemí is a small date clump, with a few huts  $1\frac{1}{4}$  miles from Kaláli; just south of this is the large fishing village of al Hadd, and half a mile from

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\* These submarine springs are characteristic of these islands; several will be described in the sequel; the water is often obtained by merely putting down a hollow bamboo, when the fresh water will rise through it above the surface of the sea. Lieut. Whish, I.N., in 1859 obtained a supply (in shoaler water) by means of a spirit pump.

† This is the clump of trees called Arad bluff by Capt. Brucks; [meaning, it appears, that the appearance of the trees, from a distance, resembled a bluff hill.



this last, near the extreme south point, a small village called Musheir ; the tide sometimes overflowing the ground between these two villages. Opposite al Hadd village is an islet on the reef, a quarter of a mile off shore, with a fresh-water spring on it called Bu Shahín.

The centre part of Maharrak island, or hollow part of the horse-shoe, is overflowed only at high water, and in the middle, east of Maharrak town, is Arad peninsula, three-quarters of a mile in extent. It has a date grove and a large double fort on it.

**BAHRAIN HARBOUR** is formed by the reefs extending off that island and Maharrak, and by a great reef lying to the northward of them, called Fasht al Yárim. The reefs are all flat, and the bottom stony, chiefly of white colour ; they generally show well. The fish weirs on them are some guide, except at high water, when they are covered. Discoloured water extends sometimes quite across the harbour inside Ras Khaseifa.

Bahrain island reef extends only a quarter of a mile off opposite Manáma town, there being a bight in the reef here which enables the native vessels to lie near the town ; with the Shaikh's house S.E.  $\frac{1}{2}$  E., a point of it projects half a mile from the shore. It increases in extent to the westward, and towards the Portuguese fort is one to  $1\frac{1}{4}$  miles in breadth ; and, north of that fort, foul ground extends 2 miles off, with a boat channel just outside Lighthouse rock. Part of the detached patch is dry at low water, and is called Liya ; there is a narrow channel leading to the westward just north of it, with a 2 fathoms flat between it and the Khor al Bab. The minarets in one with Rufaa fort will keep a vessel just clear of Liya shoal, and of the 2 fathoms bank north of it. The Khor al Bab is the passage south of the Yárim shoal. (*See* page 142.)

Maharrak island reef is very extensive, and has a shallow channel through it on its west side, to the town of Maharrak, and to Khor Kaliya. The natives give names to different parts of this reef, but there appears to be no general name for the whole. On the east side of Maharrak island it extends probably from  $1\frac{1}{2}$  to 2 miles off, with soundings decreasing gradually from 6 fathoms at about one mile off its edge. North-east of Kaláli, a point of the reef called Kashásha, extends about 2 miles off, in the direction of Arza islet.

**Ras Khaseifa** is the north-west point of this reef, and the principal danger in entering the harbour, being generally to leeward, and extending so far from the land. The reef dries off from Maharrak island in a north-west direction nearly 2 miles, and outside this is an extensive spit, with only  $2\frac{1}{2}$  fathoms at  $3\frac{1}{2}$  miles distance

from the island, the depth on it decreasing towards the dry reef. With Kaláli tower just shutting in behind Simáhi date grove, you are on the pitch of this spit.

From this point the edge of the shoal runs southward, with 4 to 6 fathoms very near it for  $2\frac{1}{2}$  miles, to the entrance to Maharrak khor, a mark for the entrance of which is Saya islet, E. by S.  $\frac{1}{2}$  S., or in one with the south end of Basaitin village. This khor runs south-eastward to Maharrak town, but is very shoal, having in some parts only 3 or 4 feet at low water.

With Saya bearing about East, there is a 9-foot patch  $2\frac{1}{2}$  miles from Basaitin, and from this the edge of the foul ground runs about south to Ras Zarwán, The minarets in one with Jebel Dukhán lead 800 yards clear to the westward of this danger.

**The anchorage** for large vessels would be to westward of this patch, in  $3\frac{1}{2}$  fathoms, with Saya on with Basaitin clump, and the minarets seen between Jebel Dukhán and Rufaa fort.

**Ras Zarwán** is the west point of the reef forming the north side of the inner anchorage; its outer tip is  $1\frac{1}{2}$  miles N.W. by N. from Manáma (Shaikh's house). When off the pitch, Saya is just touching the north-west extreme of Maharrak island. The great body of the reef at this point shows well, but the extreme outer patch, which is detached and has a little more water on it, is not so clearly seen. A beacon, consisting of a stout hand mast surmounted by a barrel (vertical), painted black with a broad white band, stood on this patch. It is reported to have disappeared in 1886.

There are 3 to  $3\frac{1}{2}$  fathoms at low water in this part of the harbour, which is only half a mile broad. The inner anchorage is round this point, in  $2\frac{1}{2}$  to 3 fathoms, just outside the native vessels, rather more than a mile off shore, with a little minaret just open to the left of the Shaikh's house. The edge of the reef runs from Zarwán to S.E. for  $1\frac{1}{4}$  miles, forming the north side of the inner harbour, which shoals regularly towards the town. The anchorage is close over to the Zarwán side; the southern part of the bay towards Nayim and the Portuguese fort being shoal. The whole outer harbour, or belt of deep water between the reefs, is called Suleisil. The bottom is mud and sand in the inner anchorage, good holding ground; in the outer part, sand and shells. South of a line drawn W. by S. from Maharrak north date grove (Ríya), the depths are under 3 fathoms. North-west of Ras Khaseifa the greatest depth is 4 fathoms; to the southward of this line the soundings are from 5 to 7 fathoms, shoaling to 3 and 4 close to the reefs; but in places, 7 fathoms are found very near the reefs. Outside that line, in the entrance of the harbour, the soundings are 4 to 5 fathoms.

**FASHT AL YÁRIM.**—This extensive reef, which protects Bahrain harbour from the shamál or north-west wind, is pear-shaped, about 13 miles in length from north to south, and towards its northern end 8 miles in breadth. The centre and southern parts are composed of rock and sand, but the northern end is of coral, large lumps of which are broken off and thrown up by the heavy sea which breaks upon its edge. The whole of the reef shows well at low-water springs; on the northern end are black lumps of decayed coral, and the southern part appears as a large sand-bank.

Ras ash Shabb, the northern point of the reef, is in lat.  $26^{\circ} 32' 30''$  N.; there are 3 fathoms within a quarter of a mile of the point, but as little as  $2\frac{1}{2}$  fathoms N.W. by W. 3 miles from it. This point being out of sight of land, is the chief danger to be avoided in making the place; it is 16 miles N. by W.  $\frac{1}{4}$  W. from Ríya date trees, and has 5 fathoms at about 4 miles off to the eastward.

On the eastern side of the reef is a bight called Haráka, with a depth of from one to 2 fathoms, in which the pearl fishing boats find shelter during a shamál. Southward of Haráka and off Ras al Ain 5 miles N.N.E. of Jádum, the water deepens very gradually in an E.S.E. direction for 4 miles to the 3-fathoms line. Eastward of Jádum, the southern point, there are 3 fathoms at one mile from the reef, but the water shoals suddenly from 3 to 2 fathoms.

Jádum point is on the north side of the entrance to the Khor al Bab, and from it the edge of the reef has an average direction of N.W. by N. for 9 or 10 miles, as far as the north-west point, and forms the east side of that passage.

The north edge is only approximately determined.

The reef at Ras as Sala,  $6\frac{3}{4}$  miles N.W. by N. from Jádum point, is steep-to, there being 4 fathoms close to its edge; but 2 miles W.S.W. from the north-western point there are but  $2\frac{1}{2}$  fathoms.

**Kaliya**, the dry rock on Fasht al Yárim,  $2\frac{1}{3}$  miles eastward of Ras as Sala, is just uncovered at high water. It bears N.  $\frac{3}{4}$  W. from Portuguese fort, distant  $11\frac{1}{2}$  miles.

**Anchorage.**—Off Jádum there is good anchorage, entirely protected by the reef from the north-west wind.

The Yárim is chiefly of white sand, or soft white stone; and there are many dark patches of rock on it near the northern edge. It is dry in parts at low water; some of the rocks on the north part uncover at half tide, appearing as if boats were anchored on it. The whole reef generally shows well, especially with the sun behind you.

**Buoys.**—Three buoys are maintained in the harbour by the mail steamers as shown on the chart, but they are sometimes not in position, and a stranger should be prepared for this. (*See* page 141.)

**DIRECTIONS.**—When bound to Bahrain from the northward (Bushire, &c.), a large vessel would have to avoid Rennie shoal.\* A departure had best be taken from Jebel Direng, which should bear about N.E., from which position, in 20 to 30 fathoms water, a S.S.W. course will take her well clear of that shoal, and, according to the tide, she would strike either the Bu Amáma or Bu Atháma pearl bank. If drawing less than 15 feet, she may steer a direct course for these banks from Bushire outer roads.

If it shoals suddenly from 35 fathoms to 12, and perhaps 6 on the Pearl bank, deepening again when over it to 20 and 25, she has passed over the eastern or Bu Atháma bank ; but if it shoals gradually to 20, then quickly to 9 or 8, afterwards deepening only to 12 or 13, she has struck the Bu Amáma, and must then steer South, so as not to sight Maharrak island on a bearing to the southward of S.S.W. To the east-south-eastward of the two pearl banks before mentioned, there is a space of 30 or 40 miles East and West, on the edge of the Pearl bank, to the eastward of the meridan of  $51^{\circ}$ , with overfalls of from 9 to 20 fathoms, called Abu Kharáb.

The soundings, after deepening over the Pearl bank, shoal again soon to 8 and 7 fathoms, and she may get a cast of 5, on the little bank shown on the chart, in which case she is sure of her position.

A good look out should be kept from aloft ; the edge of the Yárim will probably be seen by the pale green water, especially in the morning.†

The date trees on Maharrak, Jebel Dukhán, and Rufaa fort will be sighted nearly at the same time if the weather be clear. The outer buoy may be seen before the trees or forts on Maharrak island. Jebel Dukhán is sometimes not seen at all on entering.

**Draught** is recommended not to exceed 19 feet.

**Entering the harbour.**—The winds being north-westerly during the greater portion of the year are generally fair for running in ; in the morning a vessel might have to work against the land wind. In the morning it is advisable to hug the Yárim side, as the Maharrak reef would not be seen under the sun ; in the afternoon the reverse is the case.

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\* *See* page 147 : least water 17 feet,

† These directions are thus given, as the place has often to be made before the morning sights, and the tides are apt to set a vessel either to eastward or westward. In the former case the north-east point of the Yárim would be a danger ; in the latter she might make the Díbal shoal (a set of 9 miles either way would be sufficient for this). If attention be paid to the soundings, as given above, her position can hardly be a matter of doubt.

To enter Bahrain harbour bring Jebel Dukkan a little to the left of Simahi date clump bearing S.S.W., or on with the fort in Arad village, if seen, and keep it so until Kaláli tower and the west-end of Basaitin village (the left and right conspicuous objects on Maharrak island) subtend an angle of  $19^\circ$ , then alter course to W. by S. until Kaláli tower just closes behind Ríya date clump and Jebel Dukkan is over the minarets (if discernible) bearing S.  $\frac{1}{3}$  W. Then, if drawing more than 15 or 16 feet, steer S. by W.  $\frac{3}{4}$  W. for the Portuguese fort, and anchor in the Outer harbour with Ríya date clump bearing E.  $\frac{3}{4}$  N., or Saya islet on with Basaitin village, in  $3\frac{1}{2}$  or 4 fathoms water, and 3 miles from the town.

Approaching from the eastward in clear weather, the square hill Jebel Thahrán on the Katif coast, bearing W.  $\frac{1}{2}$  S., leads clear to the northward of Khaseifa reef.

It would not be advisable for a sailing vessel with a north-westerly wind to stand down towards Maharrak on the S.S.W. course after being clear of the south-east part of the Yárim, as she might not be able weather Ras Khaseifa. If bound into the Inner harbour, keep Jebel Dukkan over the minarets until Saya islet comes just open of ad Dir village trees, bearing N.E. by E.  $\frac{2}{3}$  E., then steer S.E. for Manáma Shaikh's house, and anchor according to depth in  $2\frac{1}{2}$  to 3 fathoms outside the native craft.

The minarets will have been lost sight of from the deck, behind the trees, before reaching Zarwán, perhaps from aloft they might be kept in sight.

If the buoys which have been placed for the guidance of the mail steam vessels are in position and can be seen, they are of great service, and with the aid of the chart and a good look out from aloft, as the water is clear and the reefs generally visible, will enable a vessel to avoid the dangers. As these buoys are maintained solely at the expense of the mail steamers a vessel must not rely on their being in position. The outer buoy in 1888 was conical with 2 or 3 balls; the inner buoy conical with diamond shape, and the anchoring buoy a cask with diamond shape.

**In working** out of the Inner anchorage, which will generally have to be done unless any land wind early in the morning be taken advantage of, very short tacks must be made till past Ras Zarwán, there being less than half a mile of clear channel to work in. The west side of Maharrak reef, south of Ras Khaseifa, is steep-to, 6-fathoms, in some parts, being close to its edge; the eye must be the chief guide. After passing Zarwán, the minarets on with Rufaa fort is a good tacking mark on the west side of the harbour, till past Jádum point of the Yárim shoal.

**Khor Kaliya.**—Between the south side of Maharrak and the north-east side of Bahrain island is a khor, from half to one mile wide, with soundings of 3 to 6 fathoms, which runs close up to Maharrak town, and is much used by native vessels; it has never been used by European vessels. The shallow Maharrak creek, already mentioned, joins this with Bahrain harbour; but large native vessels have to go round outside Maharrak island. The eye must be the guide attempting to enter this south-east harbour, as it has been called, until a survey has been made. Its entrance is round the point of the reef, which extends 4 miles to south-eastward from al Hadd village on Maharrak island.

**KHOR AL BAB** is the name given to the passage south of the Fasht al Yárim, leading from Bahrain to al Katíf. Pilots can be obtained in Bahrain to take a vessel through.

No ship drawing more than 15 feet should use the Khor al Bab channel, and all vessels should take a native pilot at Bahrain.

The entrance to Khor al Bab is on the west side of Bahrain harbour round the Jádum or south point of the Yárim. The pilots always get a shoal cast on the south end of the Jádum, so as to be sure which side they are on, and then bear up to south-westward into the khor. The direction of the khor is N.W. by N., and the average breadth a mile, with soundings of  $3\frac{1}{2}$  to 5 fathoms, but having shoaler patches in it.

Three miles within the entrance is a branch of the khor to westward, on the south side of which is a small sand-bank, on the reef, called Marwádi, hardly covered at high water, which always has flocks of birds on it. On the north side of this branch channel is Khor Fasht reef.

**Khor Fasht.**—This reef lying  $2\frac{1}{2}$  miles westward of Jádum is about 3 miles in extent, having two or three sand-banks upon it; the largest of these banks is on the south side and uncovers at a quarter ebb. On the reef near the above sand-bank is a fresh-water spring with 3 feet over it at low water; this spring is much used by the pearl fishers during the season, but in the cold weather it is closed up by the natives. It is difficult to find this spring, except at low water, when the sea is smooth. A transit mark for it is the Portuguese fort in one with the highest part of Marwádi sand.\* The reef is composed entirely of coral, but the greater portion of it is dead.

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\* H.M. Schooner *Mahi*, I.N., lay here sheltered from all winds, and filled up with water by means of a pipe and hose which conveyed the water through the sea into the boat, the vessel lying within a quarter of a mile of the spring.

This reef is generally steep-to except on its south-eastern side where a spit runs out a short distance.

Between Khor Fasht and Fasht al Yárim there is a channel of from 3 to 4 fathoms, but in the middle of the channel there is a patch of  $2\frac{3}{4}$  fathoms.

**Ras al Yadda** is a large sand-bank, the extent of which has not been determined. Shoal water extends from it to within three-quarters of a mile of the southern point of Khor Fasht, between which and the shoal water there is a depth of 4 fathoms.

**Chaschús** is a reef of some extent with several sand-banks upon it which are shifted about by the strong winds and tides, its north-eastern point being N.W. 7 miles from Khor Fasht. There is a shoal spit with from  $1\frac{1}{2}$  to 2 fathoms upon it, nearly 3 miles East of Chaschús, which forms the western side of Khor al Bab.

Midway between this spit and Ras as Sala the western point of Fasht al Yárim, there is a shoal about a mile in extent, of from  $2\frac{1}{2}$  to 3 fathoms; its eastern edge is W.N.W.  $1\frac{1}{2}$  miles from Ras as Sala.

**Najwa**, a reef lying N. by W. nearly 6 miles from Chaschús, is  $2\frac{1}{2}$  miles long from North to South, and  $1\frac{1}{4}$  miles wide. Upon it are two sand-banks, the one in its centre being always dry, and the other on the southern end showing only at low water.

The large sand-bank on Najwa, as also those on Chaschús, are generally conspicuous from the south-eastward at half tide.

**Rak as Surra**, a pearl-bank, midway between Najwa and Fasht al Yárim reefs, is 3 miles long, E.S.E. and W.N.W., and one mile broad; upon it are from 2 to  $2\frac{3}{4}$  fathoms. The shoalest spot, a rocky patch of 2 fathoms, is in latitude  $26^{\circ} 32' N.$ , longitude  $50^{\circ} 23' E.$  The water is generally much discoloured over the rocky parts.

This bank, deepening to the eastward into 6 and 7 fathoms, joins the Adála bank projecting northward from Fasht al Yárim.

Between Rak as Surra and Najwa the channel deepens to from 6 to 9 fathoms. Northward to Rak as Surra there is a belt of water in which there is as much as 16 fathoms.

**Khaura bank**.—The shoalest part of this bank,  $3\frac{1}{4}$  fathoms, lies N.N.E. 5 miles from the north end of Najwa. Its western edge deepens suddenly from 5 to 13 and 14 fathoms, with Najwa sand-bank bearing South, and the house on Ras Tannúra point W.  $\frac{1}{4}$  S., deep water being carried as far as the point.

**Shaikh Gata bank**, to the eastward of Khaura bank, is a prolongation northward of the Adála bank; its shoalest part, a patch of  $3\frac{3}{4}$  fathoms, is North 7 miles from Ras ash Shabb.

Between these banks there is a deep channel of from 11 to 13 fathoms.

Upon all the pearl-banks sudden differences in the depths, of 2 and 3 fathoms, will be often found.

**DIRECTIONS.**—Proceeding out of Bahrain through Khor al Bab, after clearing the west spit of the outer harbour, when Simáhi date trees on the north part of Maharrak island bear E. by S., steer W.N.W. until the Portuguese fort on the north end of Bahrain island comes in line with Jebel Dukhán; a N.W. by N. course will then lead through the channel, care being taken to guard against the set of the flood which runs very strongly westward along the south side of Khor Fasht reef, between that and the Marwádi shoal. The edge of Khor Fasht shows plainly and is steep-to; the centre of Jebel Dukhán bearing nothing eastward of S. by E.  $\frac{1}{4}$  E. leads eastward of the reef.

The water shoals gradually towards Fasht al Yárim and the soundings will give indication of approaching it, except off Ras as Sala where it is deep close to the reef. When Kaliya rock bears N.E. by E. you are clear to northward of the Khor Fasht. This rock and the Marwádi sand are useful marks in beating through the khor.

When to the northward of Khor Fasht reef after losing sight of Jebel Dukhán, the only objects visible are the high water rock on Fasht al Yárim, which shows well at half tide, the hills of Jebel Thahrán and Mathra; and, on nearing them, the sand-banks on Chaschús and Najwa reefs; these objects are easily recognised by a stranger.

When clear to the northward of Khor Fasht, Mathra or Conical hill will bear W.  $\frac{1}{4}$  S., and a N.W. by N. course allowing for tide, will lead northward of Najwa reef, but this course crosses the  $2\frac{1}{2}$  fathom bank lying W.N.W. from Ras as Sala.

On nearing Najwa reef the water shoals suddenly from 7 to 3 fathoms, but by passing  $1\frac{1}{2}$  miles eastward of it deep water will be carried to Ras Tannúra, which bears N.W. from Najwa. Upon Ras Tannúra is a small house; it is just visible from Najwa and is a good object to steer for.

From the shoal spot of 2 fathoms upon Rak as Surra, Mathra or Conical hill bears S.W. by W., and the dry sand-bank on Najwa is not seen; therefore, keeping the dry bank on Najwa well in sight will ensure being to the westward of Rak as Surra.

Between Chaschús and Najwa the channel is  $4\frac{1}{2}$  miles wide, with depths of from  $2\frac{1}{2}$  to 7 fathoms; Mathra or Conical hill bearing S.W. by W.  $\frac{1}{2}$  W. clears the northern extreme of Chaschús, and the same hill bearing S.W. will clear the south spit of Najwa.



A projecting point of the shore reef, about 7 miles South of Ras Tannúra, is called Ras Khali, and has a fresh water spring on it, under the sea. The passage between it and Najwa is between 2 and 3 miles wide, with  $3\frac{1}{2}$  to 6 fathoms. The Chaschús sand is nearly 8 miles from the shore, so that little is seen of the coast in working up.

From Ras Kuwákib the coast runs to N.W. towards al Katif, 10 miles below which place are a number of small rocky hills, visible about 9 miles, which are called Marákibat Sadún, from their resembling the hulls of baghalas.

In working between Ras Khali and the Najwa reef the pilots stand off shore till these rocky hills are out of sight, when they tack.\*

**DAMMÁM** is an important town and fort in the occupation of the Turks, who now claim the whole Arab coast as far as al Wakra, and the whole of al Katr. The principal fort, which is visible 10 miles, lies on an island on the shore reef, nearly joined to the main; it has a very tall tower in the centre of the fort, on which is the flagstaff. The rest of the town and a smaller fort stand on the mainland near it.

The channels through the reef, by which the native vessels approach it, which are shallow, and probably only practicable at high water, have not been examined; the island and coast line behind it are only approximately delineated, there being a narrow channel behind it, said to be dry at low water.

**Saihát**, a town and large fort on the coast, about 5 miles S.S.E. of al Katíf. Thick date groves commence here, and continue for 2 or 3 miles beyond al Katíf. There is a high sand-hill behind this place, visible about 12 miles. Opposite to it is a channel, commencing in a bight of the reef northward of Ras Khali, called Khor Saihát, which is the best channel for large boats proceeding to al Katíf, one branch running up to the northward towards that place; the other branch turns to the southward, and is that by which boats approach Dammám. On the shore, half-way between this place and al Katíf, is a fort and town called Anich.

**AL KATIF†** is an important town on the coast, S.W. by W.  $\frac{3}{4}$  W.,  $9\frac{1}{2}$  miles from Ras Tannúra. The fort, the only part seen from the

\* These directions for Bahrain and the Khor al Bab, have been re-written in great part from the survey of Bahrain harbour by other hands and later experience.

† Sometimes called al Khah, from a village which stood there before the present town.

sea, is large, but contains little besides the residence of the Shaikh and his followers, the town being scattered in the date groves surrounding the fort. There is a minaret 80 to 100 feet high in the south part of the fort, and the citadel in the north-west corner is said to have been built by the Portuguese. A high brown sand-hill, 3 miles W.N.W. of the town, is visible about 12 miles, or from Ras Tannúra. There is a good bazaar here. There being plenty of fresh water in the neighbourhood in springs, it is very fertile, and well grown with dates, and fruit trees of different kinds. Quantities of vegetables, melons, &c. are grown in the gardens round the town, and some rice is cultivated. The date groves extend a few miles northward of the town, after which the coast is perfectly desert.

The Turkish government have rendered the whole of the adjacent country tributary, and have a garrison here.

On the shore reef, opposite the town, lies the fertile island of Tárut, which is  $3\frac{1}{2}$  miles in length and breadth; its eastern half is closely grown with high date trees, near the centre of which is the fort of the same name, which has high towers showing above the trees, and is visible 10 to 11 miles. On its eastern shore, N.E. of this fort, is a large fishing village called Sanábis, and at its south point is the square fort and town of Dárin.

The town of al Katíf can only be approached by small boats; the largest boats entering by the Saihát khor. There is a smaller khor, the entrance to which is about 3 miles East of Dárin; it runs westward, about a quarter of a mile off that place, and joins the Saihát channel near Burj Abul Lif, a small fort or tower on the reef,  $1\frac{1}{4}$  miles West of Dárin. The largest boats do not go farther in than this fort, but those not drawing more than 6 or 7 feet go up the khor to al Katíf. The main channel passes a quarter of a mile eastward of that place; but there is a small branch, dry at low water, which admits of such boats at high water, close up to the walls of the fort. There is a channel round the north end of Tárut island, only navigable at high water, which joins the khor from Burj Abul Lif, opposite al Katíf; a vessel anchoring off this khor would have to do so from 4 to 5 miles East of Dárin.

**RAS TANNURA** is the south point of a long strip of sand, with sand-hills on its outer edge, which forms the north side of al Katíf bay, and in some parts is only 100 yards wide. A small house stands on the point, which is in Lat.  $26^{\circ} 37' 30''$  N., and Long.  $50^{\circ} 9' 46''$  E. The cape is visible from 8 to 9 miles, and shows white with the sun on it; the south point is very low. The reefs inside this point show well, especially the shore reef.

The name signifies whirlpool, and is given from the strong tides off the point. South of this point the flood-stream sets to the southward ; it also sets strong round inside the point to north-westward. The tides are very complicated ; there appears to be a great meeting of them off this point (*see* page 128).

The ebb appears to run through to the north-eastward from Ras Tannúra between Fasht Abu Saafa and al Ashíra.

There is anchorage under this point, sheltered from all winds, with the point bearing S.E., and one to 2 cables off shore ; but the bottom is hard, and plenty of cable wanted. At 3 miles north of the point, on the seaward side, the reef extends  $1\frac{1}{4}$  miles off, but near its southern tip there is no reef. Vessels entering the anchorage must round this point quite close, about half a cable distant, and then luff up for the anchorage, making a short tack if necessary. The passage in, which has 4 and 5 fathoms, is only a quarter of a mile wide, there being a one-fathom bank at that distance from the point, running N.W. and S.E. ; the flood sets rather across on to it, so there is no danger of being too near Ras Tannúra when rounding it. The channel runs on to N.W., passing, at 4 miles distance, close to southward of an islet, and has 5 fathoms in some parts, but is narrow and tortuous. The reef off Tárut island extends to within one mile of this point, and thence the edge runs in a south-south-west direction to the entrance of Saihát creek. There is a clear passage of about 5 miles between Ras Tannúra and Najwa reef.

**FASHT BU SAAFA** is a dangerous shoal N.E. by N.  $\frac{1}{4}$  N.,  $22\frac{3}{4}$  miles from Ras Tannúra ; it is a patch of large lumps of rock, and the sea breaks heavily on it, there being only 3 feet over some of the rocks ; the whole shoal is under 2 miles in extent. It might be expected this reef would always show well, but this is not the case. The *Marie* sailed twice quite close past it, with a good look-out expressly for it without seeing it at all. The bottom is sandy round it, and 16 fathoms are quite close to. There is a detached 9-fathoms bank 2 miles to the eastward, and great overfalls between it and the coast, the depths varying from 7 and 9 to 20 fathoms. The shoal is frequented by fishermen from Tárut island, who take large quantities of fish with lines. As little as 5 fathoms water was found between this shoal and al Ashíra.

**RENNIE SHOAL\*** is a small bank,  $1\frac{1}{4}$  miles long by three-quarters broad ; bottom sand, with lumps of rock. The least water

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\* Discovered in the E. I. C. schooner *Constance*, Lieut. J. Rennie, I.N., 1848.

17 feet, is only found in one spot. The soundings near the shoal are 30 fathoms one mile north and east of it, and 20 to 25 to the southward and westward, so that it forms a kind of outlier of the Pearl bank. It is a danger for large vessels going between Bushire and Bahrain, being in the direct course between those places. Nothing was seen to indicate the shoal while passing over it in  $4\frac{1}{2}$  fathoms water.

**Ashíra** is a large pearl bank 7 or 8 miles in extent, lying about 13 miles North of the Yárim shoal, with overfalls of 3 to 10 fathoms on it; on its east side it nearly joins the Bu Amáma: there is a passage 8 miles wide between it and the Bu Saafa, with depths of 20 fathoms in some places.

**RAS TANNÚRA to BANDER MISHAAB.—General Description.**—The shore continues a low sandy or stony desert, with a few isolated hills at intervals; it is fronted for nearly the whole distance by extensive reefs, sometimes with passages inside them. Several low islets lie off this coast. The sea is not generally so clear as farther to the south, owing to the white clay bottom found in many parts, and the shoals do not show so well; many discoloured patches, of whitish muddy colour, are often seen, which look exactly like shoal patches; but on standing into them no change in the depth is found. This is apt to mislead the navigator, although the warning of discoloured water cannot safely be neglected. There are no fixed inhabitants or towns on the main, on this part of the coast, nor for 60 miles above Mishaab, a coast line altogether 180 miles in extent. The country above al Katíf, as far as Kuwait, is called Bar al Adán; it is frequented by several Bedawín tribes, the principal of whom are the Al Ejmán.\* The average direction of the coast is N.W.  $\frac{1}{2}$  N.; the great Pearl bank decreases in width off it and may be said to end about Abu Alí island, although pearls are fished for on a small scale on some banks north of that island. This part of the survey is very incomplete.

From Ras Tannúra, Ras Abu Ali bears N.W. by N. 49 miles. The coast between them is desert and has several low hills in places, which serve as landmarks.

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\* Another large tribe, the Beni Hájir, occupy the country about 20 miles on each side of al Katíf; they bear a bad character. They wander over the whole country as far as al Odaid, and have recently seized boats and committed petty piracies. The remnant of the once powerful tribe, Beni Khálid, which has been nearly destroyed in wars with the Wahhábi, have become incorporated with the Al Ejmán, between Kuwait and Ras al Ghar. Two other tribes in the neighbourhood of al Katíf, are called Al Morra and Mukhátiba.

**Ras al Kaliya** is a high sand-hill 16 miles to the north-westward of Tannúra; the shoal water extends 3 miles off this point, and 4 miles N.W. of it is a square black rocky hillock, a little inland, called Faneitis, which is rather remarkable. The coast is stony or sandy, with low shrubs.

**Al Khaweir** is a high sand-hill on a slightly projecting point, which forms the south end of the large shallow bay called Dúhat Abu Ali: inland of this point are some very high sand-hills, and on the coast a few miles north of it, is a small stony hill. Seven miles east of the point is a shoal patch in the fairway, nearly dry, called Dáka?

**Ras Abu Ali** is the east, low, rocky point of the island of the same name, which is 12 miles long East and West, forming the north side of the bay of Abu Ali. The island lies off Ras Barábakh, a point of the mainland, which is 8 miles W. by S. from Ras Abu Ali. The passage between the island and this point is narrow and shoal. There is a ruined tomb\* a short distance from the cape, and a spit extends off it upwards of 2 miles to the eastward. The bay to the southward of this cape has good anchorage in a shamál. There is little reef on the north side of the bay, but on the west and south sides shoal water extends 3 miles off shore.

The Arabs say there are date trees in one or two places on the south-west side of this bay, with springs of fresh water.

The bottom is hard sand under 8 or 10 fathoms, and mud above that depth; the soundings are pretty regular, from 18 fathoms in the centre of the channel to 6 and 4 close to the reef, and 7 within half a mile of the spit off Ras Abu Ali.

**Al Jinna** is a small sandy islet, about 10 feet above the sea, 9 miles E. by N.  $\frac{3}{4}$  N. from Ras Abu Ali, and visible 7 or 8 miles. It is half a mile long, and very narrow, and has a reef off it a quarter to three-quarters of a mile, which is steep-to, and extends farthest off on the north side. The anchorage off this islet is bad, being in deep water and uneven bottom.

**Al Jiraida** is a similar islet, but somewhat higher, being visible 9 or 10 miles; it is little over a quarter of a mile in extent, and bears S.E. by E.  $\frac{1}{4}$  E.,  $12\frac{1}{2}$  miles from Abu Ali. The reef is most extensive on the north side, where it is half a mile off. There are 20 fathoms water at only a quarter of a mile from the edge, so that here also the anchorage is bad. It is doubtful whether the channel between these islets is clear of danger, as it has not been sounded;

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\* Of a Shaikh, from whom the island is named.

and between Jiraida and Abu Saafa shoal the sea is full of shoal patches, with no safe channel between them, there being no marks, but there are 20 to 30 fathoms water between them in places. There is a navigable channel inside these shoals and islets, from Tannúra up to Abu Ali, and thence on north-westward; its width varies from 5 miles at the north end, to 10 and 15 towards the southern end. The soundings are from 8 and 10 to 20 fathoms, and somewhat irregular in parts.

**RAS BIDDÍYA** is a point of low sand with tufts of grass, forming the north entrance point of Dúhat Musalamiyya. It bears W.N.W.  $19\frac{1}{2}$  miles from Ras Abu Ali, and is in Lat.  $27^{\circ} 25' 16''$  N., and Long.  $49^{\circ} 19' 53''$  E. The entrance channel to the bay is close round the point, and barely a quarter of a mile wide; the sand-bank on the south side of the channel continues a mile or more past the point to north-eastward, in a long spit, so that boats entering the khor run down from the northward along the edge of the shore reef which extends from a quarter to half a mile off shore. The bay is mostly shallow, but there is a deep khor running up to the island of the same name,\* which lies West, 4 or 5 miles from the point, and is about half a mile in extent.

**Musalamiyya** is a village on the east side of this island, inhabited by fishermen of the Omair tribe (about 400 men); the boats lie on the north side of the island. It is a large village, and built on the island to avoid the Bedawín. The bay or backwater runs in some distance at the back of the island. The mainland on the north side of the bay is all low; opposite the south side of the island it forms a slight bluff, and from thence to the southward for some miles is elevated 50 to 80 feet, and grown over with shrubs.

**Janna** island is about  $2\frac{1}{2}$  miles south of Ras Biddiya, and three-quarters of a mile off the mainland. It is level on top, of light colour, and has cliffs on the north-east side, 35 feet high; the west part of the island is low. The length East and West is about  $1\frac{1}{2}$  miles, and there is a small fort and village on the north side, inhabited by about 200 men of the Omair tribe, all fishermen. There is fresh water in wells. Both this place and Musalamiyya are under the Shaikh of al Katíf.

Just inside Ras Biddiya, a branch of the khor runs to southward, between Janna and the mainland, with 3 or 4 fathoms in it; a small branch of this admits boats, at high water, close up to the village.

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\* This island is also called Jezírat Omair, from the name of the tribe.

There is a little basin with 3 fathoms, close to the north-east side of the island, in which the large boats lie; but the entrance, which is from the eastward, is nearly dry at low water.

Dry sand-banks extend 2 miles to the northward and one mile to the eastward of the island, and south of it is a large shallow bay running about 15 miles to the southward, and ending in a swamp, the entrance to which, between this island and the west end of Abu Ali, is 7 miles wide. A vessel anchoring off this place could not get much nearer than 5 miles, there being a 2-fathoms flat to the eastward of the island; she had best anchor with Janna fort S. by W. to S.W. by W., in 3 fathoms at low water.

**Ras al Ghar.**—From Biddíya point the coast runs to North and N.W. for 9 miles to Ras al Ghar all brown coloured, with rocky hillocks, overgrown with small shrubs. There is little shore reef from al Ghar to Biddíya; but from this point there are extensive reefs as far as Ras al Mishaáb; foul ground extending about 5 miles North from Ras al Ghar.

**Fasht al Kash\*** is an extensive detached reef, bearing from Ras Biddíya N.E. by E.  $\frac{1}{2}$  E., distant 13 miles. The whole of the channel between it and the main has not been sounded; but there is a passage on the shore side, in some places 7 miles wide; and the whole width of the channel may be clear. This is the entrance to the channel leading past Abu Ali to al Katif anchorage.

**DIRECTIONS** for the channel from Ras al Ghar to Tannúra.—It should only be attempted by daylight, the vessel anchoring at sunset. A departure should be taken, by sighting Herkúz or al Krán island, and a course shaped for the coast just below Ras al Ghar, which will be seen 7 or 8 miles. The soundings are little guide in approaching it, there being overfalls from 5 to 10 fathoms. When the coast is well in sight, or about 4 miles off, steer to E.S.E. for Abu Ali, which will not be seen more than 5 or 6 miles. Pass about midway between the east point of the island and al Jinna,† so as to clear the spit off the east point of Abu Ali. After passing al Jiraida, keep over towards the coast near al Khaweir, till past the shoal patch about 5 miles east of that point, when stand along shore, keeping 2 to 3 miles off, till near Ras Tannúra; you may then approach the coast to one mile or less. Attention is required off the high sand-hill called Ras al Kaliya, where the shoal water extends about

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\* So called from the noise of the sea washing over it.

† Not to be confounded with Janna.

3 miles off. This point may be recognised by Faneitis hill, a short distance to the northward.

If working through, too long tacks must not be made off shore, so as to be entangled among the reefs; as a rule, it would not be advisable to stand on long after the shore is down.

Off this coast, to the north-eastward of Ras al Ghar, lie five islets, all very low, and with deep water close to them. It is not recommended to make any of this group by night, if it can be avoided; they would also be difficult to make in the haze caused by a shamál, especially in the summer. The flood sets through this group of islands westward. There is no fresh water on any of them. The anchorage is bad at all these islands, being in deep water, except at al Krán.

**Jezírat Fársi** (*i.e.* the Persian) is a small islet, nowhere more than a quarter of a mile across, and but a few feet above the sea level. It is grown with coarse grass and brushwood, and has a beacon of loose stones piled up in a pyramidal form on its northern end, about 12 feet high; this is in lat.  $27^{\circ} 59' 36''$  N., and long.  $50^{\circ} 10' 8''$  E., and visible 7 to 8 miles, looking like a boat's sail. The sandy beach of the island is quite white. The reef round it extends nowhere more than a quarter of a mile off, and shows plainly; it is steep-to, 25 fathoms being less than a quarter of a mile off shore on the south side. Outside this island, and Arabi, there are 30 fathoms within a mile. There are flocks of small birds on Fársi at certain seasons, and their noise may be heard on a quiet night when about a mile from the island, and long before it could be seen. It is frequented by fishermen chiefly from Khárag, who catch turtle, which abound on this island, for oil and shell. The island is 57 miles distant from the nearest part of the Persian coast, and 53 from the Arab coast, just south of Ras al Ghar.

**Jezírat Arabi** (*i.e.* the Arabian) is a small sand-bank, with rocky base, lower even than Fársi; its greatest dimension is about 600 yards, and there is no grass on it. There is a small pile of stones in the centre, but too small to be of service as a beacon. It is not visible more than 5 or 6 miles. The reef does not extend more than a quarter of a mile off it in any direction. It bears S.  $\frac{1}{4}$  W., 13 miles from Fársi.

The island literally swarms with birds (cormorants), and is covered in the season with their nests and young ones; so that you can hardly walk without treading on the eggs. It has a deposit of guano, a few inches thick, all over it. Like Fársi, it is visited by fishermen to catch turtle.



**Jezírat al Kran** is nearly a mile in length, N.E. and S.W.; a few feet above the sea, and covered with brushwood.\* Few birds were seen on this island, compared with the last two. The reef extends off it nearly half a mile on the south, and perhaps, a mile on the north side; the soundings on the south side are less bold than at Fársi; 10 fathoms being about half a mile off the reef. This island is frequented by fishermen from Musalamiyya, who dry fish, make turtle oil, &c., which they dispose of at al Kuweit or al Basra. It lies S.W.  $\frac{1}{2}$  W. 24 miles from Fársi islet, and 30 miles from the coast. The anchorage is on the S.E. side, in 8 fathoms, sand, half a mile off the island. The S.W. or observation point is in lat.  $27^{\circ} 42' 37''$  N., and long.  $49^{\circ} 49' 2''$  E.

**Jezírat al Karaiyin** is a small sandy islet hardly above high water level, 4 miles S.  $\frac{1}{2}$  W. from the centre of al Kran. It is covered with birds, and lies on a small reef. There is a clear channel, with 14 fathoms water, between this and al Kran. Capt. Brucks states there is a 5 fathoms bank, about East 8 miles from this islet, but its exact position was not fixed. The *Euphrates* was steered over the assigned position without finding it. There is a channel 13 miles wide between this islet and Fasht al Kash, and one of 17 miles between it and al Jinna, which both appear to be clear, but they have not been examined sufficiently to assert it positively. A good look-out would be necessary, if passing through it.

**Jezírat Herkúz** is hardly above the level of high water, a mere sand-bank, about 200 yards in length, and not visible more than 5 miles. The reef surrounding it is small, and deep-to, 15 fathoms being close to the edge. There are few birds at this islet, which lies W.  $\frac{1}{2}$  S., 26 miles from Fársi. There is no danger between this and the other islets, the soundings being from 20 to 30 fathoms, muddy bottom; there is also a clear passage of 20 miles, with 25 fathoms, between it and the Bildáni reefs.

**Ras at Tanájib**, N.W.  $\frac{1}{4}$  N.,  $23\frac{1}{4}$  miles from Ras al Ghar, is a point, with a flat light coloured hill on it, visible 8 or 9 miles, and 70 to 100 feet high; the highest part at the north end. The coast between this place and Ras al Ghar forms a slight bay, which is shallow, banks extending 5 to 9 miles off the shore. The coast is mostly low between these points; a little hill, about 14 miles to southward of Tanájib, is called Jebel Munífa. Near this hill is a

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\* A native boat, hauled up on the island, was the first thing sighted, and supposed to be a rock in the sea, so low and level is the islet.

small bay and anchorage for boats called Dúhat Balbúl.\* The 20 fathoms line is from 20 to 25 miles off this point of the coast, between which depth and 8 fathoms, the bottom is generally white clay. The coast may be approached to 10 fathoms until near the Bildáni reefs, which are steep-to. Off this point commences the great chain of shoals, extending all the way to Mishaab, and lying from 14 to 17 miles off shore.

**RAS BILDÁNI**, the south-east tip of these reefs, is 17 miles N.E. by E.  $\frac{1}{2}$  E. from Ras Tanájib. Some parts of these banks are dry at low water, and there are 10 fathoms at about half a mile outside them. By night 18 fathoms, or 15 by day, are safe depths to approach their edge, which is everywhere out of sight of land. There is a boat channel along shore inside these shoals; it has not been examined, and some Arabs told us there was enough water for a ship.

A vessel might anchor under the lee of Ras Bildáni, sheltered from the shamál, with Tanájib hill, W. by S., distant 7 or 8 miles. This anchorage would be quite open to the south-easter.

**RAS AL MISHAAB** is a low sandy point of land, with patches of low cliff, opposite the north end of the Bildáni shoals. There is a large bay to the south of it, mostly shoal, in which native craft anchor sheltered from the shamál. It is recognizable by the landmark called Jebel Amúdi, a dark volcanic looking hill, 105 feet in height, which makes in 4 or 5 hummocks, and lies  $2\frac{1}{4}$  miles S.W. by W. of the point; it is visible 11 to 12 miles. Close to south-eastward of Ras Mishaab, lies Jezírat al Muktaa, about 2 miles in length, N.E. and S.W.; which has cliffs, 20 to 30 feet high, on its eastern side, and is covered with grass and brushwood. There is no channel inside it.

The shore reef extends 4 miles N.N.E. of this island, with 2 and  $2\frac{1}{2}$  fathoms, and has a nearly dry patch near its outer edge,  $3\frac{1}{2}$  miles N.N.E.  $\frac{1}{2}$  E. from the island, called Kassár Umm as Sahál; 9 fathoms are close to the edge of this shoal. A sandy spit projects  $2\frac{1}{2}$  miles East of the island, with several dry sand-banks on it; to the southward of this is the anchorage called Bander Mishaab, the entrance to which is about 3 miles wide, with depths of 6 and 7 fathoms, between the spit off Muktaa, and a detached patch of reef (called Kassár al Mítma). The best berth is with Muktaa island about N.W.,

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\* A kind of fair is held in this place, from April to June, when the Bedawín barter their ghi (preserved rancid butter much esteemed in the East) for dates, and rice, and other necessaries which are brought by boat from Kuweit, &c.; many of the Bedawín coming from considerable distances.

distant  $1\frac{1}{2}$  to 2 miles. This is the entrance to the boat channel (before mentioned) leading to Tanájib. *See* page 154.

From Kassár al Mítma the edge of the shoal water, which appears to be continuous, runs about  $7\frac{1}{2}$  miles E.N.E. and then turns E.S.E. towards Ras Bildáni. The northern extreme of these shoals bears E. by N., about 13 miles, from Jezirat Muktaa.

At 9 miles S. by E. of Muktaa is a small hill on the coast called Jebel Tháluf. It forms in two little lumps, with a bluff to the north, and is about 40 feet high. The intermediate shore is low; 4 or 5 miles to S.E. of this hill is a projecting low point called Ras Safaniyya, between which and Tanájib the coast is low, with one or two small hills, forming a deep bight, but it is little known.

Al Kumra, 18 miles N.E. of Muktaa is a pearl bank, with 8 fathoms on it, with 12 fathoms between it and that island.

**RAS AL MISHAAB to BÜBIYÁN ISLAND.—General Observations.**—The tides are strongly felt off the coast, setting to N.N.W. and S.S.E.

This part of the coast is not sheltered from the shamál, which blows at N.N.W., or even North, with considerable sea from North or N.N.E. There is no place of shelter on the coast, except for very small boats, between Kuweit and Mishaab.

The coast is safe to approach to 4 miles, until north of Kataat Araifiyán, when one mile is a safe distance. The soundings are little guide, there being overfalls inside the islets lying off it. The bottom under 8 fathoms, is sand or rock, but outside 9 fathoms all mud. Between Mishaab and Shiaiba the principal tribe is the al Huwájir, about 1,500 men.

**Ras al Khafjí** is a sandy point, N.N.W., 14 miles from Muktaa island, on the north side of which is a small khor. The shore reef extends a mile off the point. The coast between this and Muktaa, which is of low sand-hills, forms a slight bay, called Dúhat al Asli, which is shoal, 3 fathoms being 2 to 3 miles off shore.

**RAS BARDHALJ** is a low white sandy point, about 5 miles N.N.W. of the last, and has a spit extending a mile off to north-eastward. There are 9 fathoms at 2 miles, and 15 fathoms, 10 miles off this part of the coast. The coast falls back, forming a bay on each side of this point, that on the north side being the deepest; and there is a small sandy spit in it about 4 miles N.W. of the point, called Hadd al Hamára, behind which boats find shelter.

**RAS AZ ZAUR** is a long low sandy point, the tip of which bears about N. by W.  $\frac{1}{2}$  W., 15 miles, from Bardhalj; it has a spit

extending 2 miles off. The bay between it and the last point appears clear of danger; 15 fathoms are 8 miles off this point; bottom, white mud and sand. Jebel Banáya 80 feet high, 7 miles S. by W. of Ras az Zaur, is a small dark coloured saddle-hill, and visible 8 or 9 miles, standing about 2 miles from the shore, which is of low white sand-hills. Two miles to the north of this hill is the entrance to a small creek of the same name, frequented by fishing boats.

**Ras al Kaliya** is a low point 10 miles N.W. by N. from Ras az Zaur; the shore between forms a deep bay, which has many shoal patches, to a distance of 4 miles from the shore, rendering it unsafe to enter: it is called Dúhat az Zaur. A spit extends 3 miles off Ras al Kaliya, with 9 fathoms close to it. About 3 miles N.W. of the low point is a small square-shaped hill, visible 8 or 9 miles, supposed to resemble a fort, from which the name is given to the point.

**Kataat Araifiyán** is a small detached reef 7 miles N. by W. from Ras al Kaliya, and about 4 from the shore. It is nearly dry, and has 7 fathoms close to all round. Excepting this shoal, the coast is clear of danger from Kaliya point to the entrance of Kuwait harbour.

**RAS AL ARZ**, the south entrance point of Kuwait bay, is a low sandy point 30 miles N. by W.  $\frac{1}{2}$  W. from Ras al Kaliya. The intermediate coast is low, but the land, a stony desert of brown colour, rises gradually from the shore to a height of 200 to 300 feet, at a few miles inland, and is visible about 18 miles off. There are several small forts on the coast below this point, all under the Chief of Kuwait. There is no shore reef between this point and Ras al Kaliya beyond a cable's length or so; 10 fathoms are within a mile of the beach for 20 miles below this point, while off it 14 fathoms are within half a mile; a very heavy sea runs on it in a kaus. Five miles S.W. of this point is a small square fort on the higher ground (180 feet), which is a good landmark when making Kuwait.

The coast runs nearly straight S.  $\frac{1}{2}$  E. for 25 miles from Ras al Arz, and 10 miles below it is Fanaitis, a small fort on the coast, with 40 men; 3 miles beyond this is another called Abu Halaifa, with a few date trees near it and wells of good water. Some horses are shipped from this place in Kuwait boats for India. Half way between these two places is a small date clump called al Fantas.

**Shiaiba**.—A small square fort on the shore  $5\frac{1}{2}$  miles South of Abu Halaifa, inhabited by about forty families of the Ejmán tribe. The beach is sandy, but rocky underneath; landing at low water indifferent; there is a young date plantation here, and some water

in wells ; the people are herdsmen and cultivators at this and the other two places just mentioned.

**JEZÍRAT KUBBAR** is a low white sandy islet, overgrown with brushwood, 26 miles S.E.  $\frac{1}{2}$  E. from Ras al Arz, and 17 from the nearest point of the main ; it is not more than a quarter of a mile across, and is highest on the west side, where some sandy hillocks are 8 feet above the sea ; it is visible 6 to 7 miles, and is surrounded by a little reef. The observation spot at S.W. corner is in lat.  $29^{\circ} 4' 10''$  N., and long.  $48^{\circ} 29' 52''$  E.

**Caution.**—On its west and north-west sides are detached one fathom patches, half to three-quarters of a mile off shore, and steep-to ; 15 to 19 fathoms are about a mile off, and on the north and east sides the water deepens when approaching it.

There are few birds here, but *chakúr*\* frequent the island, coming over from the main. There is no water, except soon after rain. It affords little shelter in a *shamál*, and the tide swinging a vessel broadside on to the sea renders it an inconvenient anchorage. The best berth is with the island N.N.W. in 11 fathoms, about half a mile off shore.

The soundings between the island and the main are 17 fathoms, and to the east of it 13 or 15 fathoms for a distance of 25 miles. At 3 miles to the north-eastward lies an extensive mud flat, with 6 and 7 fathoms, about 15 miles in extent, called Abu Jezza. It has not been sounded, but as pearls are fished for on it, some parts are probably hard bottom.

**JEZÍRAT KÁRU** is a sandy islet, and very low, only 3 or 4 feet above high water, with a very few tufts of grass, and not much more than a cable across ; it swarms with birds (cormorants ?) and is covered with their eggs and young in the season ; there is a deposit of a few inches of guano over its surface. It has a spit half a mile off the north side, and deep water near it, 15 fathoms being a quarter of a mile off, so that the soundings are not much guide approaching it. By night a vessel should not come under 20 fathoms from seaward. Káru bears S.E., 21 miles from Kubbar, the soundings between the islands being irregular, 15 to 19 fathoms, and between Káru and the coast 17 to 10 fathoms. There are 20 fathoms one to 2 miles south-westward of it.

Observation spot, centre of south side, is in lat.  $28^{\circ} 48' 58''$  N., and long.  $48^{\circ} 46' 57''$  E.

The anchorage at this island is worse than at Kubbar.

**DANGER.**—At  $1\frac{1}{2}$  miles N.N.W. of this islet is a detached small patch, quite steep-to, on which the sea breaks at low water.

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\* A kind of partridge.

**Umm al Marádím** is a low sandy islet, covered with brush-wood; greatest dimensions under half a mile, and visible 6 miles. A small reef extends off it from a quarter to half a mile, except at the south point. The soundings near it are 14 to 16 fathoms at half a mile off. Anchor with the island North, quarter of a mile distant. It bears from Kubbar S. by E.  $\frac{3}{4}$  E., 25 miles, and lies 13 miles from the mainland. The soundings between this island and Kubbar are 14 to 19 fathoms, and between it and the main the deepest water is 16 fathoms, which is near the island. On the east side the depths are 14 fathoms for 6 miles from it. There is no water on this island, or on Káru.

**DANGER.**—A small reef, steep-to, one rock on which is dry, at half-tide, lies  $2\frac{1}{8}$  miles N.N.W. from this islet.

**KUWEIT**,\* or **al Kuweit**, is one of the most important towns on the Gulf: it contains about 10 to 15,000 inhabitants, of the al Uttúb tribe (Subá branch). It is situated on the south side of a fine bay 20 miles long East and West, by 10 broad, with water of a suitable depth for anchorage all over (10 fathoms and under), and good holding ground. In a shamál a considerable sea gets up in the bay but not enough to distress a large vessel. The south-east entrance point of the bay is Ras al Arz, already described. The soundings in the bay are somewhat irregular, 14 to 16 fathoms off Ras al Arz; off Ras al Ajúza, 6 to 10 fathoms; thence shoaling to 6 and 7 at the entrance of Dúhat Káthama.

The town commences a mile W.S.W. of Ras al Ajúza and extends a mile along the shore; it is surrounded by a low wall with towers, in a ruinous state, and there is a large suburb of mat huts outside the walls. It is a nice looking place, the houses being mostly of stone and sun-dried bricks. There is a detached tower near the wells a mile southward of the town. Shoal water extends about half a mile off the town, and the beach dries off a considerable distance, but at high water the sea washes up to the houses; the native boats are hauled up on the beach opposite the town, and are protected from the sea by substantial breakwaters of loose stone, within which they lie aground. The observation spot at the north end of the town, beach, is in lat.  $29^{\circ} 22' 56''$  N., and long.  $47^{\circ} 59' 22''$  E.

The whole country round being quite desert, all white sand, the place is entirely dependent on its trade for support; it possesses

\* The authors have not been able to ascertain why this important town should have been called Grane, by former geographers, and still be so called on maps. The name is unknown to the inhabitants, or to any Arabs in the Gulf.

See Admiralty plan, Kuwait harbour, No. 22; scale,  $m = 0.5$  of an inch.

more baghalas than any port in the Gulf, which trade to India, but it only sends about 40 boats to the pearl fishery; the Kuwait boats only fishing as far south as Abu Ali. They have 130 vessels from 20 to 300 tons. Being a warlike united tribe, they are much respected, if not feared by other tribes, and none venture to attack them. They acknowledge subjection to Turkey, and fly the Turkish flag. Their vessels bring dates from al Basra, which they take to India, &c.; and many horses are shipped to India from this port. From India they bring timber, rice, &c.; they also do much of the carrying trade for other ports in the Gulf. Kuwait is much visited by the Bedawín, who bring horses, cattle, &c., which they barter for dates, clothes, arms, &c.; one or two Bedawín camps are generally to be seen near the town.\*

**Supplies.**—Cattle may be procured, also poultry, and some vegetables; firewood dear and scarce, water indifferent.

**Tides.**—It is high water, full and change, at al Kuwait, 12h. 15m.; springs rise 9 feet.

**Ras al Ajúza** (*i.e.* Old Woman's cape) is a low point 6 miles N.W. by W.  $\frac{1}{2}$  W. from Ras al Arz, the coast between the points forming a bay with shallow water,† so that vessels should not stand within the straight line between these points. A rocky flat, dry at low water, with fish weirs on it, extends a third of a mile off this point: native boats anchor  $1\frac{1}{2}$  miles S.S.E. of it, in shelter during a shamál. There are three small forts near the shore between this and Ras al Arz, and nearer to the latter point. From this the coast runs 9 miles S.W. by W., to the bottom of a shallow bay called Dúhat Abu Tala. Half a mile west of the point are two little trees, the only vegetation seen.

**Fasht al Hadeiba** is a rocky 2-fathoms shoal,  $1\frac{3}{4}$  miles North of the east end of the town. The passage to the anchorage, with 3 to 5 fathoms in it, is between this and the town reef. The anchorage for large vessels off the town is called Bander Toweina; it is in  $3\frac{1}{2}$  to 4 fathoms, with the town E.S.E.  $1\frac{1}{4}$  to  $1\frac{1}{2}$  miles. By standing well in close to the large native vessels, a ship would be sheltered from the shamál by al Akkáz reef, the point of which bears N.W. about  $2\frac{1}{2}$  miles from the west end of the town.

A short distance south-westward of the town are some white sand-hills called as Saleibikhát; beyond which the shore continues low to the bottom of Dúhat Abu Tala.

\* Shaikh Jábír, the chief of this place, died in 1859, at the age of 107 or 108. The first establishment of the tribe here took place about A.D. 1716. The border of that part of Arabia called al Hasa is 2 days' journey from this place.

† The edge bears to northward of N.W. from Ras al Arz.

**Jezírat Kurein** is a barren islet, with a brown coloured little peak, 30 or 40 feet high,  $5\frac{1}{2}$  miles W.S.W. of Ras al Ajúza, and three-quarters of a mile from the shore; just to south-east of it is a small basin, with 2 fathoms water, where the smaller native boats lie. The entrance to it is from Bander Toweina, inside al Akkáz reef. This anchorage, which is called Bander ash Shuwaikh, is quite sheltered from all winds.

**Ras Asheirij**, a low point, lying West  $8\frac{1}{2}$  miles from Ras al Ajúza; from this the shore runs South 4 miles, to the bottom of Dúhat Abu Tala: close eastward of this point lies a small low rocky island called Jezírat Umm an Namil (*i.e.* the Ant's island). The bay between this and Kurein islet is shoal, and a reef extends from 4 to 5 miles to the eastward, off this point and Umm an Namil, until opposite the town of Kuwait; the eastern part of this reef is called al Akkáz (*i.e.* the walking stick); the part of it off Umm an Namil is called al Bakhsh. We were assured there was no passage between Umm an Namil and al Akkáz into Bander Shuwaikh; all the native craft we saw enter that anchorage passed to the southward of al Akkáz.

**Dúhat Káthama** is the name given to the part of Kuwait bay west of Ras Asheirij: the south side of it has a W.S.W. direction for 5 miles from that point; it is free of danger, and shoals gradually from 7 fathoms at the entrance, which is 4 miles broad, towards the head. It is also called Dúhat Jahra, from a place a short distance inland from the head of it, where there is a little cultivation, and three forts or tombs.\*

**The north shore** of Kuwait bay is called al Aghthi; it is several hundred feet high, level on the top, and of dusky brown colour; apparently stony hills, ending towards the sea in a steep declivity. It curves gradually round from the bottom of Dúhat Káthama to the entrance of Khor as Subbiyya (*i.e.* the creek of the little girl). A mud flat extends some distance off, increasing in width to the eastward, and off the eastern part, as much as 4 or 5 miles in breadth, with soundings on it under 2 fathoms.

**JEZÍRAT FAILAKA** is an island of triangular shape, 7 miles long N.W. and S.E., by 3 miles broad at its western end; it is all very low, except a small mound at its south-west corner, and not visible more than 6 to 8 miles. It stands on an extensive flat of mud

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\* Jahra is near the ruins of the ancient town of Tima, which are said to be very extensive.



and sand, with rocky patches, and one to 2 fathoms over it, extending south-eastward of the entrance of Khor as Subbiyya.

The highest part of the island is the small mound on its south-west side, which has a tomb on it, called Saad as Sayid, 30 feet above the sea. About the centre of the west side is the village of az Zowar, with a small date grove, and about 250 inhabitants. Native boats anchoring on the flat, off the little tomb, shift round the point on which it stands, according to the wind. The natives own many boats; the island is unhealthy; water indifferent.

The flat extends about a mile off the island on the north-east side; off the south-east end it is rocky and extends 3 to 4 miles off shore, being nearly dry at the extreme tip, which is steep-to, having 7 fathoms close to it; caution is therefore required in passing it: the low south-east point of the island would not be seen till near its edge. At 2 miles West of this point of the reef is Uha, a small sandy islet on the reef.

On the south-west side of Failaka the flat extends 2 to 3 miles off, but is not so dangerous; and, south of the island, the 3-fathoms line is upwards of 6 miles off, so that the island is not often sighted when entering the harbour unless working in. The great mud flat lying between it and the main is called Thárub; on it, 2 miles to the north-westward of Failaka lies Mashkan, a low sandy islet.

**DIRECTIONS** for making and entering Kuwait. By day Kubbar island may be sighted; but by night it would be advisable not to deepen the water to more than 10 fathoms, on the south side of the flat called Abu Jezza, in order to avoid that island. The principal danger outside the harbour is the spit extending to south-east of Failaka island. When opposite Kubbar the mainland would be sighted. The land below Ras al Arz may be approached to half a mile or even less. The hill fort below that point bearing West will clear the 3-fathoms flat south of Failaka, which island would probably not be sighted. Ras al Arz, which is very low, is steep-to, and may be rounded quite close,\* until bearing to eastward of South.

If working in, the lead will be a guide to tack on the Failaka flat, after passing Uha, except just opposite Ras al Arz, where 10 fathoms are very close to the shoal water. After passing that part, the lead is again a good guide on the north side of the bay. After passing

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\* H.M.S. *Vigilant* in 1865 grounded N.N.W.  $\frac{1}{2}$  W. about one mile from the extreme point.

Ras al Arz, do not approach the bay between it and Ras Ajúza, which latter may be passed half a mile off; the rocks off it are dry at low water, and at half tide the fish weirs on it serve as a mark. Stand between the shore reef and Fasht al Hadeiba, which latter, by day, will be seen, or by attention to the lead, may be avoided, as the water shoals regularly, but quickly, on to its edge. It is, perhaps, preferable to feel the way along the edge of the shore reef, hauling out, if a shoal cast is obtained. Anchor in  $3\frac{1}{2}$  to 4 fathoms, with the town about E.S.E. Vessels anchoring outside the Hadeiba shoal, or with the town S. by W. to S.S.W. would not be much sheltered in a *kaus*. There is generally a light land wind in the morning in fine weather, and in the afternoon fine sea breezes from S.E. to East, which are felt some distance down this coast, and as far out as the group of islets off it.

**JEZÍRAT RUBIYÁN** is a large low island, about 26 miles in length North and South, by 12 broad; it is quite barren, and partly overflowed at high water, and the soil impregnated with salt. Its south point, called Ras al Abreisha, is 7 miles N.N.W. from Failaka island. Its western side is nearly connected with the main its whole length, being only separated from it by Khor Subbiyya, which is about half a mile in width, and has 2 to 5 fathoms in it; but its mouth, which is on the Thárub flat, is shallow, and has several nearly dry patches off it (Capt. Brucks).

At the north end of Bubiyan lies the island of Warba, separated from Bubiyan by Khor Subbiyya, and from the main by the channel, which has a creek leading out of it northward, navigated by small native boats for some distance to a place called Duweira, or Khuweira, the port of az Zubair, which is a large town, 10 or 12 miles south-westward of al Basra, standing on a swampy desert plain.\*

**Khor Abdalla** is a great inlet, having Bubiyan island on the west, and the banks on the west side of the Shatt al Arab on the east. It is 12 miles wide at its entrance, and runs to north-westward to Warba island, joining Khor Subbiyya. The soundings in it are 4 to 5 fathoms. It is never visited by European ships. The entrance to it has not been sounded across. Off the easternmost point of Bubiyan, and at the entrance of Khor Abdalla, lies a detached bank of hard sand, called Aich al Haleiba, dry at low water in places, about 8 miles in length, and running nearly parallel with

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\* This channel has not been explored, and the information here given is from various authorities; it is supposed to have been an ancient canal.

Bubiyán island, with a 3-fathoms channel between them. The southern tip of this reef is 6 miles off the island, with 3 and 4 fathoms close to.

The sand flat connecting Failaka and the main continues on the south-east side of Bubiyán to a distance of 2 to 3 miles off, and 3 fathoms are 6 miles off the low and swampy shore of this island.

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## CHAPTER VII.

## CAPE MONZE (RAS MUWÁRI) TO GWÁDAR HEAD.

## VARIATION IN 1890.

Cape Monze, 1° 00' E.		Gwádar head, 0° 45' E.
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**GENERAL REMARKS.\***—This part of the coast produces but little, the inhabitants are few, scattered, and migratory. The eastern part from the Habb river to Ras Malán is the seaboard of a province feudatory to the Kalát state, called Lus Baila; the western portion belongs to Makrán, properly so called, and is all under the Khan of Kalát, as far as the boundary of the Gwádar territory. The different districts are described in their place. Water is everywhere bad and difficult to get, and few supplies only are obtainable at the villages; it is in great part an uninhabited desert, presenting a wilderness of hills and cliffs with swampy or arid clay plains.

**ASPECT of COAST.**—The Lakki hills, which end at cape Monze, are a sharp ridge of even outline, 740 feet high, with three remarkable hummocks along the summit; they extend in a north-easterly direction, decreasing in height, and recede from the coast, which is then low as far as Manora point.

**DIRECTION BANK.**—The bank of soundings extends off shore westward of cape Monze to about long. 66° E., and at 35 to 45 miles south-west of cape Monze and of Karáchi there are found 30 to 40 fathoms, coral and sand, with 42 to 48 fathoms water and soft bottom inside. This bank lies north-west and south-east, and is 45 miles long.

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\* See Admiralty chart, Maskat to Karachi, No. 38.

The 30 and 20-fathoms lines are nearly parallel to the shore, and the 10-fathoms line is about 4 miles off shore near Manora, but quite close to the shoal water west of that place, and to cape Monze. The bottom is everywhere soft, except under 20 fathoms to south-westward of the cape, and under 10 fathoms to eastward of it.\*

**CAPE MONZE**, properly **RAS MUWÁRI**, which is 18 miles W.  $\frac{3}{4}$  N. from Manora lighthouse, is a sloping bluff headland, forming the seaward termination of the Lakki hills. There is a peak 460 feet high at three-quarters of a mile to eastward of the cape, and to the northward a detached ridge of hills extends along the shore to the entrance of the Habb river; northward of these hills is the plain or valley of the river. The cape may be approached to one-third of a mile on the west side, but a spit with 2 or 3 fathoms runs out half a mile to the south and south-west, close outside which there are 6 and 12 fathoms, rocky ground; to the south-eastward of the cape there are 14 fathoms about a cable from the rocks.

For 4 miles east of Cape Monze the hills lie near to the sea, with deep water close in, after which the shore is low and rocky for 5 miles, and then forms a bay.

**CHURNA ISLAND** consists of a sharp ridge of almost precipitous, light-coloured, limestone hills, which make from southward in a peak, 580 feet high; from the westward, it appears as a flat-topped hill, sloping to the N.W. and S.E." It is only 1,200 yards across, barren and uninhabited, and has no water. A few shrubs and some coarse herbage grow on the north side. It lies 4 miles north-west of cape Monze, at  $3\frac{1}{2}$  miles off the nearest part of the coast, and shuts in behind the cape when bearing N.W.  $\frac{1}{2}$  N. It is steep-to, and safe to approach, there being 5 to 6 fathoms within a quarter of a mile. There is anchorage with the high part of the island bearing S.W. in 5 fathoms, sand, and 2 cables off shore.

The channel between the island and the coast is quite clear, with 6 to 13 fathoms in overfalls, rocky bottom. North-eastward of the island, at a distance of 2 miles, is a small, hard, 5-fathoms bank or overfall, with 7 and 8 fathoms round it. To the south-westward of the island the soundings are irregular, over rocky bottom, for 6 miles.

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\* For directions for Karáchi, *see* West Coast of Hindostan Pilot. Old Manora lighthouse was in latitude  $24^{\circ} 47' 21''$  N., and longitude  $66^{\circ} 58' 49''$ ; it has been moved lately three cables in a direction N.N.W.  $\frac{1}{4}$  W.

**SUNMIYÁNI BAY.**—This great bay extends from cape Monze to the eastern or little Hára range of hills. From the former place the coast line extends in a general north by east direction for 19 miles, with a succession of rocky points and little bays, and thence turns to N.W., West, and W. by S., becoming sandy with sand-hills covered with small brushwood and coarse grass, as far as the Hára hills. The Pubb mountains recede gradually from the coast and take a northerly direction, increasing in height to the northward to upwards of 3,000 feet. On their west side is an extensive plain extending for 50 miles in breadth to the foot of the Hára hills, which run inland from the coast in a direction to eastward of North, and have been estimated at 1,500 feet; they are of light colour and irregular outline. This great plain is drained by Pur Ali river, which has its mouth at Sunmiyáni. The town of Baila, the capital of the province, stands in this valley, distant 65 statute miles by road according to a route survey by Capt. Stiffe.

**SOUNDINGS.**—On the east side of Sunmiyáni bay, 10 fathoms will be found about 3 miles off shore, which is a safe distance to pass this part of the coast, but off Sunmiyáni this depth is 9 miles from shore, and the soundings decrease regularly to 4 fathoms at low water quite close to the bar off Sunmiyáni, and within a mile of the shore east of that place. The water deepens regularly, 20 fathoms being from 4 to 6 miles outside the 10-fathoms line, and thence it increases gradually to 60 or 70 at the edge of the bank of soundings.

**Eastern shore.**—Close to northward of cape Monze is a small bay with a sandy beach, opposite a valley between the Lakki ridge and a mass of detached hills, 560 feet high, which extend to and form the south bank of Habb river, having cliffs along the sea face. The water is all shoal with overfalls inside this bay, the north and south points may be approached to one-third of a mile or 4 fathoms, if necessary. A few fishermen are found here in the fine season.

**Habb river** forms the western frontier of Sind, or boundary of British India; it rises in the mountains north of the Pubb range, and after a course of over 150 miles, falls into the sea about 4 miles N.N.E. of cape Monze. There is no fresh water within several miles of its mouth, except during freshes. The rocky hills on its south end about a mile within the mouth, after which there is a plain on each side of the river bed, called the valley of the Habb. The north side of the entrance is low, with a sandy spit nearly across the channel. A small, isolated rocky hill, stands on this side of the river a little inland.

The entrance of Habb river is a tidal creek, nearly dry at low water and only frequented by fishing boats. It has 9 or 10 feet at high water, and there are generally breakers across the entrance. The channel outside high-water mark is variable, but easily practicable for a ship's boat. The tidal influence does not extend more than about 2 miles from the mouth.

From the river the shore is low and nearly straight to a point  $3\frac{1}{2}$  miles north of it, and then forms a bay 5 miles across, on the northern extreme of which stands Chir Chúrna or Chir Chang, a detached square, rocky hill, about 100 feet high. It appears from a distance like an islet, but is joined to the main by a low, sandy isthmus forming the north side of this bay.

**DANGERS.**—On a North bearing from the southern low point of this bay are two shoals; the southern one, which is a 3-fathoms patch, distant  $1\frac{1}{2}$  miles, the other a sunken rock distant 3 miles; this latter bears also S. by W. nearly 2 miles from Chir Chúrna, and both dangers have 4 to 6 fathoms all round. Further, at three-quarters of a mile N.W. of Chir Chúrna is a very low rocky islet, with 7 fathoms close-to and 5 between it and the land. The 10-fathoms line carries a vessel about 2 miles outside these dangers.

**Coast.**—Northward of Chir Chúrna there are three little bays with high rocky points between them, beyond the last of which is the bottom of Sunmiyáni bay, whence the coast curves round to north-westward, and is nearly straight for 15 miles to the entrance of Sunmiyáni creek. Behind the first of these little bays are large backwaters, one of which has an entrance close to eastward of Chir Chúrna, and from these the ground rises abruptly to the Pubb range, which ends just to southward of this part. From the bottom of the bay the hills leave the coast, which thence to Sunmiyáni consists of sand-hillocks, covered with tufts of grass and small bushes.

**SUNMIYÁNI\***, the seaport of Baila, is a small town consisting of a few hundred houses, built of mud, and standing on the east shore of an extensive backwater, which receives a number of large creeks, and is the outlet of the Pur Ali river. Its importance has much decreased since the British occupation of Sind, as most of its trade is now carried on through Karáchi, to which place the caravans from the interior resort, instead of as formerly to Sunmiyáni. There are few vessels larger than fishing boats belonging to the place, and the trade is in the hands of a few Banyans settled there, who farm

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\* See Admiralty plan, Sunmiyáni harbour, No. 39; scale,  $m = 2\cdot0$  in.

the customs from the Jam or ruler of Baila. The town stands close to the shore, but is difficult to make out from sea, owing to the distance, and the small size and uniformity of the buildings. The water is bad, and hardly any supplies are obtainable.

The entrance of the backwater or creek is nearly 2 miles wide, but the deep channel is narrow, and close to the eastern bank; it has 7 fathoms in places when inside, but on the bar the depth is only  $1\frac{1}{4}$  fathoms at low water. Outside the entrance a great shoal flat extends for nearly  $2\frac{1}{2}$  miles, on which the sea breaks heavily, and through which the entrance channel winds. There is a depth of 4 fathoms at low water quite close to the edge of this shoal.

The western point of the entrance, of low sand-hills, has no bushes on it; the town can be made out with a telescope when open between the entrance points; it bears from the anchorage about N.N.E., or open from the eastern point.

The eastern point of the entrance has sand-hills with small tufts or bushes, and between it and the town is a great mud flat, overflowed at high water, over which the Vindar river discharges its water during floods.

The main channel extends in a northerly direction, passing about 3 miles to westward of the town, and then turns to westward and runs about 18 miles inside the coast sand-hills, and nearly as far as the Hára mountains. It has not been surveyed. In heavy rains the water of the Pur Ali river flows into these swamps, but it is generally all absorbed in irrigation, the river being dammed about 20 miles inland. The west side of Sunmiyáni backwater is low, and partly overflowed. It is a branch on the east side of the main channel running up within a mile of the town that is used by native craft.

**Directions.**—In making Sunmiyáni, the projecting shoal with breakers is the best indication of approach, but if the water be smooth, care should be taken not to shoal to less than 5 fathoms at low water. If the weather be clear Chúrna island will be seen, and should bear S.  $\frac{1}{2}$  E. It would be well to take a departure from this island in thick weather. There are also generally fishing boats entering or leaving the harbour. Caution is necessary.

No European vessels have ever entered the creek; the largest native craft are about 30 tons burden, and have to lie about a mile from the town. Even for a boat it would be well to have a fisherman of the place as pilot.

A vessel wishing to communicate with this place should anchor off the bar in 5 or 6 fathoms, and 7 to 8 miles from the town.



**Western shore.**—From Sunmiyáni the western coast of the bay continues low with sand-hillocks and tufts of grass, with swamps and creeks behind them as far as the Hára hills; the soundings are regular, and it is safe to approach by the lead to 6 or 7 fathoms, the 3 fathoms line being from one to 2 miles off shore.

**TIDES.**—It is high water, at full and change, off Sunmiyáni at about 10h. 15m.; rise and fall 9 feet. The stream of tide is weak, and the flood comes from the westward and sets to southward round cape Monze.

**ASPECT.**—From sea the land between Hára mountains and Ras Malán appears as a succession of rugged mountains, generally of light colour, with lower whitish-clay peaks, called shur by the natives. Jebel Hingláj is a quoin-shaped mountain 3,500 feet high, 8 miles from the coast; and to left of it is a square-topped mountain, 3,800 feet, which resembles a castle with bastions, its sides appearing almost perpendicular; it is called by the natives Gúrangati,\* and is very conspicuous. From Jebel Hingláj the main branch of the Hára mountains, which is of irregular outline, and has lower hills in front, extends in an E.N.E. direction at a distance of 8 to 10 miles from the sea, as far as the lesser Hára hills.

Ras Malán makes as a long line of high, light coloured table land, ending in cliffs to seaward, and between it and Hingláj is a confused mass of lower hills and shur. There are no fixed inhabitants on this part.

**Soundings.**—The soundings between these points deepen regularly up to 18 fathoms at a distance of from 10 to 19 miles off shore, and thence quickly to no bottom; off Ras Malán the bank is almost precipitous outside the 18 or 20 fathoms line of soundings. The land is safe to approach to a depth of 10 fathoms, which is about 6 miles off shore. There is no danger inside this line, but  $3\frac{1}{2}$  fathoms,† rocky bottom, with 6 fathoms close to, are found at 2 miles off shore to southward of Jebel Ghuráb, the 3-fathoms line being generally one to  $1\frac{1}{2}$  miles, deepening to 5 and 7 fathoms at 2 to 4 miles off.

**RAS KÚCHARI** is the south-east point of a range of low cliffs extending along shore, with a detached group of low hills rising from them. There is a well of fresh water near the beach at the east end of these hills. The coast forms a slight bay to eastward of

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\* Colonel Goldsmid.

† According to Haines' survey; but it was not found by Capt. Stiffe on search for it in 1876.

this point, beyond which a low point is formed near the entrance of Pur creek or river.

**Pur river**, the position of which is not exactly determined, is a small salt water creek, but in rains discharges the drainage of the valley between the Hára ranges.

**THE COAST** is low and sandy from Sunmiyáni to the cliffs of Kúchari. In the bay to eastward of Kúchari, and about 2 miles inland are several white, conical hillocks, called Darya Cham,\* the highest being about 300 feet. They stand in a plain which extends from the back of the Kúchari coast hills inland to the foot of the Hára range.

At  $2\frac{1}{2}$  miles to westward of Kúchari point the shore is low, and a small oblong hill stands near the beach, called Jebel Ghuráb,† which at a distance appears like an island, and 4 miles beyond this are some rocks lying close to the shore and parallel to it, called Jezírat Chahárduk, or Chádma, 20 to 30 feet high, which are somewhat higher than the coast line, and therefore easily distinguished. There is good landing for a boat behind them. Between Kúchari and these islets a large vessel should not come under 8 fathoms without great care, on account of the rocky overfalls already referred to.

From these rocks the shore is low for 12 miles as far as Jebel Habb, a ridge of low hills coming down to the sea at 10 miles east of the Malán cliff. The entrance of Khor Hingúr, or Hingúl, a salt-water creek forming the mouth of the river of the same name, is in the low land a mile to the eastward of Jebel Habb, and 9 miles from the Chahárduk rocks. A boat drawing 6 feet can enter this creek at high water. Fresh water is always obtainable in its bed at some distance from the sea. The river bed is of considerable size, but generally nearly dry; it winds close round the east side of Jebel Hingláj,‡ breaking through a gap in the Habb hills, has a long course§ from the interior, and brings down quantities of drift wood

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\* These are some of the remarkable mud craters of this district, which are truncated cones of dry mud, the top of which resembles a cup filled to the brim with liquid mud, which trickles over the side at times. Ebullition takes place now and then from the centre of this pool, which is in some about 100 feet wide. They are also called Chandra kup, or Chandar kup. Kup being Sanscrit for a *well*; and the prefix the name of a deity.

† Supposed to resemble a ship, whence the name; there is a legend of its being a ship turned into stone. It has an opening through it.

‡ In this mountain is a celebrated Hindu place of pilgrimage and temple.

§ About 140 miles by Col. Ross' map.

during floods. Eastward of the river the plain is swampy after rain close inside the coast sandhills as far as and inside Kúchari hills.

**Anchorage.**—A vessel might anchor in  $3\frac{1}{2}$  fathoms,  $1\frac{1}{2}$  to  $1\frac{1}{2}$  miles off shore in the bay to eastward of Ras Kúchari, the soundings being regular.

**Water.**—Colonel Goldsmid mentions a well of good water near the sea on the east side of the Habb hills.

**RAS MALÁN** is a prominent cape, formed by a mountain mass of clay, capped with impure limestone, presenting a steep bluff, with level top; the highest part is 2,050 feet above the sea, from which the cliffs rise abruptly with no beach. Great masses of clay, detached from these mountains, are frequently falling. The S.E. point is in lat.  $25^{\circ} 18' 30''$  N., and long.  $65^{\circ} 12' 55''$  E.

From this cliff to the Habb hills the shore is low with sandhillocks, behind which is a confused mass of low hills of the kind called shur, and farther inland a high irregular range connects the high land of the Malán with Jebel Hingláj. The great Gúrangati mountain lies north of Malán bay, and 12 miles from the coast. There is a valley between it and the Hingláj range.

**Anchorage.**—Ras Malán is clear of danger, as also is the bay on its east side, where a vessel may anchor in 4 fathoms, a mile off shore, with the cape bearing S.W. by S. There are no inhabitants, nor water. There is a small hut, where a telegraph inspector lives, at the mouth of a small creek in this bay.

**The COAST.**—The Malán cliffs extend along the beach for 20 miles from the cape in a direction W.  $\frac{1}{4}$  N., decreasing in height and ending in a cliff, after which the coast is low and sandy as far as Ras Ormára, with a wide plain extending far inland from the beach. The mass of high land over Ras Malán is called Batt, it is divided at 7 miles from the cape by a great watercourse called Khor Batt, which is a gorge running quite through the mountains, and having a salt-water lagoon with sandy bar between it and the sea. The mountains are lower to westward of this ravine.

The plain west of the Batt mountain extends 8 to 10 miles inland to the foot of a range of mountains running nearly parallel to the coast in several ridges and called Tallu. They are of irregular outline, and join the Gúrangati mountains. In this plain, nearly north of Ormára east point, and 4 miles from the sea, stands another mud crater or Chandra kup; it is conspicuous, being a white cone at least 600 feet high.

**SOUNDINGS.**—This part is quite clear of danger, and the soundings are regular; beyond the depth of 20 fathoms it shelves

off quickly to no bottom. It is safe to approach by the lead, and is shallow farther off shore as Ormára is approached.

**RAS ORMÁRA**, or Aur Mára (often pronounced with a strong aspirate), is a peninsula formed by a detached mountain, which appears from sea like an island of a quoin shape until close in. Its highest part, the west end, is 1,400 feet above the sea. The top has a gentle slope to eastward and southward, and it ends on all sides in cliffs. It is of similar formation to the Malán and all the coast ranges, and its summit is only accessible with very great difficulty. The length of the southern face of this remarkable promontory is 7 miles E. by N.  $\frac{1}{2}$  N. and W. by S.  $\frac{1}{2}$  S., while the greatest breadth does not exceed 2 miles. It projects about 6 miles outside the general line of coast, to which it is joined at about the middle of the north face of the cliffs by a sandy isthmus nearly  $1\frac{1}{2}$  miles wide. Extensive bays are thus formed on each side which give good anchorage, but are shallow near the land.

The isthmus north of the village has high sand-hills in the centre, but the beach is low as far as the Batt hills. Khor Gurád is a creek in East bay, 13 miles from the town; it is shallow, after rains is the mouth of a small river, and is frequented by native boats. Khor Maníji is another such creek between the last and the Batt hills.

**Ormára** village consists of a few stone houses and musjids and some hundred mat huts, containing about 3,000 people, who are chiefly fishermen. There is a little inland traffic with a district called Kolwa, and they possess many fishing boats, besides a few small Dangis, which trade to Maskat, Karáchi, and the coast of India with salt, salt-fish, pish, grain, ghee, &c.; a few Banyans are settled here. The native village stands on the east beach of the isthmus about a mile from the cliffs and is filthy to a degree, reeking absolutely of decayed fish. A few hundred wandering herdsmen are scattered over the territory belonging to the village.\*

**Telegraph.**—There is a telegraph office on the isthmus about a mile to westward of the village, where messages are received for all parts. It is the observation spot, and in lat.  $25^{\circ} 11' 55''$  N., and long.  $64^{\circ} 37' 5''$  E.

**Water** is indifferent and scanty and brought from wells near the telegraph office; a few sheep and fowls may be got here, and excellent fish from any of the numerous canoes or fishing craft. Two and a half per cent. import or export duty is levied.

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\* The coast from Malán to Khor Kalmat, which has no other villages, is under this place, whose chief, or Náib, is appointed by the Jam of Baila.

**ANCHORAGE.**—Ormára East bay, called by the natives Díimizarr, lying to the east of the isthmus, is the general anchorage for vessels visiting the place. It has sandy bottom except near the cliffs and is shallow off the town, so that the anchorage in  $3\frac{1}{2}$  fathoms is distant  $2\frac{1}{2}$  miles from the town. The east point of the cliff, which is about 500 feet high, bears from this anchorage S. by E. The water shoals regularly standing into the bay, and the east bluff point may be approached to half a mile. The beach dries off a long way from the town, making landing inconvenient at low water, and a shoal flat extends off the north side of the cliffs. From the anchorage the telegraph office should bear about W. by S.

This bay is open to easterly winds, which blow strong at times only from December to February, but are not violent. Once during the south-west monsoon there generally occurs a blow from the east with rain, but not of long duration. If arriving during such a breeze it would be better to anchor in West bay, although communication with the shore would be more tedious. Native craft appear always to ride out these breezes. In the south-west monsoon, and indeed after April, a long swell sets round the point into the bay, causing a surf on the beach, and making a vessel roll heavily.

**Tide.**—A weak stream of tide is felt in the bay, the flood setting to the North and N.E. round the bay, and the ebb the opposite way.

The west bay of Ormára, called Padizarr, is similar to the other bay, but is shoaler and seldom visited, being open to West and S.W. A vessel would have to anchor at least 3 miles off shore with the extreme of cliff about South. The mouth of the bay is nearly 8 miles across between the west high point of Ormára and a point of the high cliffs forming Ras Sakanni.\* Between these points the shore is low and sandy; at the bottom of the bay, and about 5 miles from the town, stands a small rocky hill near the shore.

**SOUNDINGS.**—There are 7 and 6 fathoms water close in to the southward of the cliffs of Ras Ormára, and 10 fathoms at 2 to 3 miles distance; from this depth it deepens rapidly for 6 miles to the edge of the bank, which runs nearly west from this place past Astálu island, and off Pasni is 17 miles off shore.

**RAS ORMÁRA to JEBEL ZARRAIN** (Ras Pasni).—There are ranges of hills running nearly parallel with the coast, called Kuh Tálar, nearly in continuation of those north of Ormára. They gradually approach the coast, and, on the north side of Pasni bay, the lower range of these hills is close to the sea. The coast between

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\* This name is from Haines' survey. We could not get this name at Ormára.

these places is desert the whole way, and has no villages except a few huts at Kalmat.

**Ras Basúl** is the west point of the cliffs, of which Ras Sakanni, already mentioned, is the south-east point. These cliffs are continuous for more than 10 miles, and are about 800 feet high, of light colour, and irregular outline, without any marked peak. They are the sea face of a detached mass of hills, called Kangar, between which and the Tallu range is a wide plain, continuous with that lying north of Ormára. These cliffs are safe to approach to a depth of 6 fathoms or a distance of 3 miles, and 3 fathoms will be found under a mile off. The 10-fathoms line is 8 miles off, whence it deepens gradually to 16 or 18 fathoms, and thence suddenly to no bottom.

In a bay close to northward of Basúl is a creek, the mouth of a large watercourse or river of the same name, which flows from the interior between the Tallu and Tálar ranges, and rises in the mountains of the Kolwa district. The land near the sea about its mouth is very low and all swampy.

**Khor Kalmat**,\* lying half way between Ras Ormára and Ras Pasni, is the largest creek on the coast, having 5 and 6 fathoms inside, with considerable width, but the bar has only 4 or 5 feet at low water. The entrance is rendered difficult by rocks lying upwards of a mile outside the bar; the tide also is strong in the entrance. The land is very low with mangrove swamps near the entrance, and to the eastward as far as Basúl river. At some distance inside the mouth, the creek divides into several branches, which beyond the range of the sea-water are water courses. Near the mouth of the creek are a few huts with fishing boats, and 3 miles up, an old tower on the west bank with some date trees.

**The Anchorage** off Khor Kalmat is bad, the 5-fathoms line being 6 miles from the entrance; the bay between Basúl and Khor Kalmat is also shallow, and soundings in it irregular. The shore is so low as to be hardly visible when the vessel is in 4 fathoms, and it is never sighted unless bound for the place.

**ASTÁLU** island, called also Satálu, Haftalár, and various other names by different classes of natives, is  $2\frac{1}{2}$  miles long East and West, by half a mile in breadth; it is table-topped with cliffs all round, and a partly detached hill at the west end which is a little higher than the rest of the island. This peak is 260 feet above the sea, and is visible 20 miles; it is in lat.  $25^{\circ} 6' 11''$  N., and long.  $63^{\circ} 49' 40''$  E. The island rises perpendicularly out of the sea, except on the north

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\* From Haines' memoir and Col. Goldsmid's route.

side, about the centre of which is a little sandy point, and at the north-west corner there is a sandy spit forming a small boat harbour. There are rocky ledges off both ends and some detached rocks above water along the south face, but all are less than 2 cables from the cliffs, and the island may be approached on all sides to 3 cables.

There is no water on the island, which is barren, and frequented only by boats from Maskat, which catch fish and large numbers of turtle.

**Sail rock.**—At 7 cables from the centre of the south side of Astálu is a little islet or rock, 20 feet above the water, which looks like a boat under sail. It is quite steep-to, and a vessel has passed between it and the island, which passage, however, is not recommended.

**WEBB BANK\*** is rocky, a mile long East and West, with  $3\frac{1}{2}$  fathoms, or possibly only 3 fathoms, least water, and lies  $4\frac{3}{4}$  miles S.S.E. from the east point of Astálu island. The sea breaks heavily on it in the south-west monsoon. The channel between the bank and Sail rock is clear, with overfalls from 5 fathoms, rock, to 11 fathoms, mud. To the southward of this shoal, 20 fathoms mud, are only three-quarters of a mile off, and at 5 miles, 150 fathoms. Passing the shoal at night, 25 fathoms is a quite safe distance.

The channel between Astálu and the mainland is safe, but requires caution, as one or two vessels have grounded through keeping too near the island, which must not be approached under 2 miles on account of the following dangers.

**DANGERS.**—There are three small shoals to northward of Astálu island, each only a half to three quarters of a mile in extent, of which two are close together; their outer edge is  $1\frac{1}{2}$  miles from the island; they have  $1\frac{3}{4}$  fathoms at low water, with 3 to 4 fathoms between them and the island, and 5 close to northward of them. The third bears N.E. from the east bluff distant  $1\frac{1}{3}$  miles, has  $2\frac{1}{2}$  fathoms on it, and is steep-to.

The mainland opposite is very low, and has shoal water off it for 4 miles, leaving a clear channel of about 7 miles, with soundings of from 5 to 8 fathoms, the bottom being sand, rock and shell.

There is a narrow channel between these shoals and the island, and a vessel wishing to anchor off the island, can do so close in with the east point bearing South in 6 fathoms.

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\* Discovered while laying the telegraph cable in 1864, and named after Mr. F. C. Webb, C.E., then in charge of the operations; examined afterwards by Captain A. W. Stiffe.

In passing Astálu island at night, 25 fathoms muddy bottom will be a good distance; under 20 fathoms there are rocky overfalls and the lead is not a guide, nor is it a safe guide for the channel inside the island, which should not be attempted at night without great caution.

**JEBEL ZARRAIN**, called also Ras Pasni, is a conspicuous hill forming the extreme south point of the great bay in which stands the village of Pasni. It is about 400 feet high, of brown colour, and of barn shape, especially from the eastward or westward. When bearing North it forms a long notched ridge with sloping ends, and, at a distance, appears like an island, as the land around it is low. It is a good land-mark for the point, rising from the water's edge, and may be approached to about one mile or 5 fathoms, inside which the soundings are somewhat irregular.

The 10-fathoms line is 7 miles to the southward, the water deepening thence gradually to 20 fathoms, and afterwards, quickly to the edge of the bank. In Pasni bay the soundings are all under 10 fathoms.

To eastward of this cape the coast forms a small bay, beyond which is a low point called Ras Jaddi, bearing N.N.E.  $\frac{1}{2}$  E.,  $1\frac{1}{2}$  miles distant. A small cluster of clay hills of fantastic shape, and about 150 feet high, rise 300 yards from the shore. From Jaddi point a rocky spit extends half a mile, with 4 fathoms close to the edge, so that vessels require caution in passing it.

**Pasni\*** village lies about a mile to northward of Ras Jaddi, the coast between being low, and forming a bay. It is built of mat huts, with a small fort of mud and stone, and contains with its district about 500 inhabitants; those at the village are chiefly fishermen, but there are a few larger boats which trade to Gwádar and Karáchi. The coast from this to Kalmat is under Pasni. There is no vegetation near the place except a few date trees to southward; there is a mass of high, white sand-hills to south-west of the village, and to northward of these a number of the shur hills. (Page 169.)

**Telegraph.**—There is a telegraph station here, and the office is visible a little to north-westward of the town, but messages are not now received, and the office is to be removed.

**Supplies.**—The water here is not good, and there are no supplies except fish, and occasionally a few sheep and fowls.

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\* The chief of this place is under the Náib of Kej, a great feudatory of the Khan of Kalát. The village has been lately moved, and the old town no longer exists. There are the remains of an ancient extensive town about a mile up the creek.



**Anchorage.**—The bay is shallow and the anchorage is  $1\frac{1}{4}$  to  $1\frac{1}{2}$  miles off shore, with the town bearing West, and Ras Jaddi about S. by W., in 3 to  $3\frac{1}{2}$  fathoms. The soundings shoal regularly, and the bottom is sand. There is considerable surf after April, and it is then difficult to land.

**Shádi Khor** is a river which breaks through the hills north of Pasni, and ends in a large shallow creek with swampy banks just northward of the village; its mouth is two miles to north-eastward of the village, where it has formed a projecting point, with dry banks extending 6 cables off shore. Boats even can only enter at high water.

The coast ~~north~~ of Shádi Khor curves round to eastward and runs about E. by S. to Kalmat; at 8 miles to north-eastward of the river is a small boat harbour, with one or 2 fathoms inside, formed by a projecting point with some rocks a quarter to half a mile off it and not covered at high water. To northward of the river the shore is low and swampy for about 2 miles, after which the lower range of hills, chiefly shur, is in parts quite close to the sea. About half way between Pasni and Kalmat these low hills recede from the shore, which is then sandy. In this part are two small creeks or watercourses, the eastern and larger is called Rúmra.\*

The country immediately inland of this part of the coast is quite unknown as far as the Kej valley, it is believed to be a hilly and rugged desert. There is a route from Pasni to Kej, said to be about 70 miles.

**Soundings.**—The soundings between Pasni and Astálu vary from 5 to 9 fathoms, with overfalls in places, the shoal casts being hard, but there is no danger.† Near the shore the water is shoal all the way to Khor Kalmat, 3 fathoms being found 2 to 3 miles off the land.

**JEBEL ZARRAIN (Ras Pasni) to GWADAR.**—A range of mountains in continuation of the Tálar range lies parallel with the shore and 8 to 10 miles inland; its eastern part is called Chakúli Kuh, and the western, which is separated from the eastern by the river Sawur, is known as Kuh Darám, and is much higher and more conspicuous. On the summit of this range is a small barn-shaped peak 3,200 feet high, called Mukh, which is conspicuous from seaward. Lower clay hills rise in front of these, in parts close to the sea, as detailed further on.

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\* Haines' memoir, and Col. Goldsmid's route.

† Haines' memoir.

The coast appears desert, but a little distance inland, it is fertile in places and produces corn and cotton. Between Pasni and the limit of the Gwádar territory, about 14 miles east of Gwádar, is the seaboard of the district of Kolanch, which extends 20 to 30 miles inland, and is under various petty chiefs, all subordinate to the Náib of Kej. The only village near the coast between Pasni and Gwádar, is Kappar. The population of the whole of this large district has been estimated at 2,000.

**SOUNDINGS.**—From Jebel Zarrain the soundings are regular, 10 fathoms are about 7 miles off shore, decreasing to 5 miles to the westward; and the edge of the bank, which is almost precipitous beyond 20 fathoms, is about 16 miles off shore, and 8 miles outside Gwádar point. The bottom is mud in soundings greater than 5 fathoms, with patches of rock and overfalls of a fathom up to 12 fathoms.

**The COAST.**—**Ras Shamál Bander** is a cape formed by the east end of a long ridge of white clay-hills, which are very precipitous, and stand close to the sea with low ground at the back. They extend along shore for 19 miles, and are 400 to 500 feet in height. The shore is low from Jebel Zarrain to this cape, a distance of 23 miles, and Shamál Bander is easily distinguished as being the first high land near the sea after passing Zarrain; it forms a good bluff, but there is nothing remarkable in the outline of the hills, which are of even height but jagged. The cape should not be approached under 5 or 6 fathoms, as a reef of rocks projects one mile from the shore, on which the water shoals suddenly.

\* To eastward of the point is a bay which is frequented by fishing boats, and affords small vessels shelter in westerly winds, and the low east point of the bay is 11 miles W.  $\frac{1}{2}$  S. from Jebel Zarrain, the intermediate coast being nearly straight. It is low and sandy, and safe to approach to a mile in 5 fathoms; but the bay is shallow near the shore, especially near the mouth of a shallow creek or river, 3 miles to eastward of Ras Shamál Bander, where 5 fathoms would be 2 to 3 miles off.

**Ras Shahíd**, the southernmost point of the shore hills or cliffs, is 5 miles West of Ras Shamál Bander, and has a small bay on its west side, with cliffs all round. It forms the extreme of the land either from near Gwádar or Jebel Zarrain and is clear of danger, there being 5 fathoms within a mile of the shore.

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\* Haines' memoir.

**Ras Kappar** is a point easily known by a partly detached table-topped hill nearly 800 feet high, with bluff ends, and situated at the west end of the hills extending along shore from Shamál Bandar. It projects but little from the line of coast, and there is a depth of 3 fathoms at 3 cables distance. The cliffs are continuous from Shamál Bander, except between 4 and 7 miles from Kappar, where there are three gaps or notches, through one of which the Sawur river reaches the sea, forming a large salt water creek. There is no beach between Shamál Bander and this place, except in places only at low water. There is a small village or settlement of the same name near this cape, and adjoining the sea.

**Sar**, or Jebel Sar, the north-east point of Gwádar bay, and 15 miles W.  $\frac{1}{2}$  S. from Ras Kappar, is a small quoin-shaped white clay hill, 560 feet high, with a perpendicular cliff to eastward, rising from the sea. It is connected with the main by a low sandy isthmus, and to northward of this is a shallow bay extending back more than a mile; beyond which again the coast is nearly straight to Ras Kappar, and is sandy with low hills, principally shur, near the coast.

At 6 miles to the westward of Kappar, is a small hill called Kuh Dímak, standing a little inland. It is of darker colour than the hills near, has several little paps on the summit, and is among the mass of shur hills extending along shore from behind Ras Kappar.

At about 9 miles West of Kappar is a small creek or river called Khor Barámbab, which is the eastern boundary of the Gwádar territory.

There is no danger between Kappar and Sar and the coast may be safely approached to a depth of 5 or 6 fathoms, or about a mile distant. From 10 to 15 fathoms is a good depth to pass this coast in if going to Gwádar, as then, even if hazy, it would not be possible to pass the place without seeing it; but if not going to Gwádar, 20 fathoms is a better depth to lead clear outside Gwádar head.

**GWÁDAR**,\* the principal town on the Makrán coast, stands on a sandy isthmus to the northward of Gwádar head, a rocky promontory similar to, but not so high as, Ras Ormára. It contains about 5,000

\* Before the establishment of a British political officer in 1862, on account of the telegraph, the town was periodically plundered by the inland Balúch, but, their inroads having been put a stop to, the place has much increased, and developed its trade. It came into the possession of the Maskat Arabs at the end of last century, having been granted to them by Násir Khan of Kalát, and has since remained in their hands. It was plundered and burnt by the Portuguese in 1580, but they do not appear to have had any permanent settlement here, as has been stated. See Manuel de Faria y Souza "Portuguese Asia." In a valley on the hills to seaward of the town, is a remarkable bund or dam of masonry, which converted part of the valley into a reservoir for rain water. It is now ruinous, but its execution is far beyond

inhabitants, and is built in great part of mat huts, but has a square fort in the middle, with a high tower on which the flag is hoisted, and round which are clustered a number of mud and stone houses; it is nearly as filthy as Ormára. There is an Arab Wáli or governor, with a small garrison of Arab soldiers for the Sultan of Maskat; the population is chiefly Balúch, who live by fishing; a coarse cloth also is woven here, and pish mats, &c., made.

There are also a few Arabs and Banyans, the latter of whom carry on nearly all the trade, and farm the customs for a varying sum, which in 1862 was Rs. 10,000 annually. There are many migratory Balúch from the interior, whose numbers, of course, vary much, who build temporary huts on the plain, and carry on the trade with the interior. Many boats belong to this place, their number has been estimated at 250, besides 30 large dangis, or sea-going boats; many boats, some of them large, are built here. The traffic with the interior by caravans is considerable, chiefly with Kej, Panjgúr, &c.; the vessels of this port trade to Karáchi, Maskat, Basra, Bombay, and the Malabar coast. The chief imports are piece goods, sugar, rice, timber, &c.; the exports cotton, wool, ghee, salt fish, and shark fins, and some very fine dates from Panjgúr, also pish leaves and mats, &c. There has been much fever among the Europeans stationed at this place, and it is advisable to sleep on board.

**Supplies.**—The following supplies are obtainable—flour, sheep, fowls and eggs, and a few vegetables, all cheap, but not in large quantities; also rice, ghee, and other articles of native food; fish is abundant and good. Water of fair quality is obtainable near the telegraph office in wells, or by digging about 12 feet deep, but there are no water casks. There are no jetties or any convenience for landing goods, but native boats for cargo can be got.

**Telegraph.**—There is a telegraph office at Gwádar, where messages are received for all parts. The mail steam vessels call here fortnightly, both on the up and down journey, and are doing an increasing trade, which promises to become important. The telegraph office flagstaff, the observation spot, is in lat. 25° 7' 19" N., and long. 62° 19' 49" E.

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what the present people of the country are capable of, the stones being dressed and bedded in courses, and further dovetailed and joggled together; it does not appear to be European work. On the highest part of the same hill, and overlooking the town, is a rude rampart of loose stones, loop-holed for matchlocks. Two old domed tombs a mile to southward of the town are worth inspection. They bear dates A. H. 300 to 400, or about 900 years ago, and appear from the masonry to be contemporaneous with the bund. The name is also pronounced Jwádar, and the final r sometimes sounded like l. The territory dependent on this place extends from the Barámbab creek, to Ras Píshkan, and inland as far as Kuh Darám.

There are a few date and banyan trees near the town, and trees have been planted near the telegraph office, which is a large block of buildings with a flagstaff to northward of the town ; the northernmost detached building, about a mile outside the town, is the Residency.

**GWÁDAR HEAD** is a block of high land of unequal height, sloping irregularly, 7 miles in length East and West, by  $1\frac{1}{2}$  miles wide ; the low sandy isthmus joining it to the main is only 800 yards wide in the narrowest part, and on this the town and other buildings stand. It has cliffs all round, the highest part of which is the town bluff, which rises just over the town, and is 480 feet high ; the eastern point, called Ras Nuh, is a bluff 280 feet high, and may be known by a single tree standing close to the cliff. At three-quarters of a mile to the south-westward of Nuh, is Bander Hairán, a small bay where the cliffs are low, with sandy beach, which is frequented by fishing boats. The west point of the headland is called Ras Kamíti, where the cliffs are only 70 feet high.

This headland is conspicuous from the eastward, where it appears like an island of quoin shape, but from the southward and westward less so against the land behind ; it also then shows of a darker colour, while from the eastward the high white bluffs are striking ; it is visible 27 miles.

**East bay**, or ~~Dímizarr~~<sup>Z</sup>, has ~~Gwádar~~ head on the south side, and on the west the sandy isthmus, from which the coast curves gradually round to Sar point, being low and sandy the whole distance.\*

On the north side of the bay is a mass of white clay-hills, of very remarkable outline, called Jebel Mahdi, which forms a precipitous ridge rising abruptly out of the plain, and having perpendicular cliffs on the south side. It is 4 miles in length East and West, the centre bearing about North of Ras Nuh, and there is a gap of low land 2 miles in width between it and Sar cliff. The highest peak is a sugar-loaf at the east end, 1,370 feet high, to the left of which is a curious Asses-ears peak, 1,360 feet high, the furrowed sides of which resemble Gothic architecture ; and which is now known as Cathedral rock. From the east, this range, as well as Sar and Gwádar head, appear like islands ; it is visible 36 miles. Mahdi hill† is close to the beach at its east end, but more than a mile inland at its west end, opposite to which is a small creek.

The Darám range decreases in height north of Mahdi hills, and

\* See plan on Admiralty chart, Maskat to Karáchi, No. 38 ; scale,  $m = 0.5$  inch.

† Near the foot of this hill is one of the curious mud craters : it is small and but slightly elevated above the plain.

ends suddenly in a remarkable notch, or rather two great perpendicular steps, called Gar, which bears N.W. by N. 18 miles from Gwádar, and is a good landmark, being 1,550 feet high. There is a great plain at the foot of the Darám hills, extending to Jebel Mahdi, and from Gar to the sea. In this plain is a district called Nigúr, where there are some scattered hamlets, and much cultivation.

At the back of the Darám range are seen, when near Gwádar and in clear weather, the peaks of Kuh Saiji, 3,260 feet high, forming part of a chain running East and West about 20 miles inland; they are not remarkable in appearance.

**SOUNDINGS** are regular to southward of Gwádar head, outside of 10 fathoms, or one mile, deepening rapidly to 20 fathoms at 3 to 6 miles, and to no bottom at 8 miles off, the east end of the head having deeper water near than the west. Inside of 10 fathoms there is hard bottom in places, but outside that depth it is all mud. Gwádar bay is clear of danger, the water is shoaler near the cliffs than nearer the north side: at the bottom of the bay, 3 fathoms are  $1\frac{3}{4}$  miles off shore, while there is the same depth within half a mile, opposite Mahdi and Sar. With Ras Nuh S.  $\frac{1}{2}$  E. the depth across the bay is not more than  $4\frac{1}{2}$  to 5 fathoms at low water.

**Spit.**—At a mile S.  $\frac{3}{4}$  E. from Ras Nuh, is the pitch of a rocky spit extending 9 cables off the low rocky point outside Ras Nuh. It has 10 fathoms close to outside and 4 fathoms on the tip, inside which it shoals to the shore. The whole of Mahdi hill open outside the bluff leads clear to eastward of the spit. By not shoaling less than 12 fathoms, until Ras Nuh bears N. by W. you will also pass outside it. There is generally a ripple over it, and in the south-west monsoon it breaks.

Ras Nuh has 6 fathoms at 3 cables distance, and is quite safe to approach after passing the above danger; the soundings across the entrance of the bay north from the point are 6 to 7 fathoms, sand, inside which the water shoals regularly over sandy bottom.

Half-way between Nuh and the town a projecting point of cliff forms a boat harbour where native vessels are laid up, or boats take shelter.

**GWÁDAR ANCHORAGE.**—In entering the bay, after clearing the spit and rounding Ras Nuh, stand well across, bringing the telegraph office W. by S. or W.S.W.,\* and take up an anchorage according to depth, avoiding the telegraph cable; the nearer in, the

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\* A good mark is Flagstaff on with small cable house.

easier to communicate with the town, and the smoother the water. The whole of the town shut in with the west bluff of Gwádar head, or the Residency flagstaff bearing West, will be clear of the telegraph cable.

The East bay is well sheltered from south-westerly winds and sea, but in the monsoon the long, low swell coming round the point causes a vessel to roll heavily. In easterly winds it is sometimes difficult to communicate with the shore, but the author has never seen an easterly gale here strong enough to endanger a ship; a steam vessel calling at such a time might enter the west bay. *See next chapter.*

**DIRECTIONS.**—Darám barn, or Mukh, is conspicuous on all bearings, and Mahdi hill can hardly fail to be recognised; in hazy weather, when nearing Gwádar, keep in soundings of 12 to 15 fathoms, which will lead within 2 miles of Gwádar head, readily known by the tree on Ras Nuh. The next point to the westward is low and cannot be mistaken for it. In standing for the coast from the southward a vessel is liable to be thrown out of her course by the currents, which from September to April sometimes may set one to  $1\frac{1}{2}$  knots along shore in either direction; in the south-west monsoon always to eastward, but sometimes hardly perceptible.

By night, especially, keep a good look-out for fishing boats and canoes with their nets. A blue light would be answered from the telegraph office, and a lantern hoisted on the flagstaff.

In the event of dense fogs, a stranger would do well to wait, as they always clear off before noon.

**Tides.**—It is high water, full and change, at about 9h. 30m.; springs rise 8 to 9 feet. The stream is hardly perceptible, the flood sets to the eastward.

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## CHAPTER VIII.

## GWÁDAR HEAD TO RAS AL KUH.

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 VARIATION 0° 20' E. in 1890.
 

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**GENERAL OBSERVATIONS.**—Between Gwádar and Ras al Kuh, the country, although still barren, is less absolutely desert than the part east of Gwádar; its general character continues the same, the shore in parts is low, the mountains being some distance inland, but there are many high rocky points and hills, near or close to the sea. There is no town of any importance, at the present time, but several villages or settlements, the population, though scanty, being more settled than on the eastern part.

The boundary of Persia and Baluchistán is in Gwatar bay, a little to westward of Kuh Darabúl. The old boundary of Makrán proper is a pillar of stones, said to be still in existence on the hills north of the Sadaich river, beyond which is the mountainous district called Báshakird, which, except the low and narrow district near the coast, is little known.

**GWÁDAR WEST BAY**, called *Padisarr*, is a fine bay, nearly circular in shape, over 8 miles wide at the entrance, between Ras Kamíti and Ras Píshkan. Gwádar isthmus, over which is seen the town, forms its east side, and thence the coast curves round to westward, continuing low as far as Kuh Tuzhdán, a small ridge of low hills on the shore to northward of Píshkan. Gar mountain, 1,550 feet high, which bears North from near the centre of the bay, is a conspicuous landmark. A small creek at the head of the bay, and 12 miles from Gwádar, is called Khor Ankara, the land near it is marshy.

**RAS PÍSHKAN**, or Físhkan, is a narrow rocky point of low cliffs less than 20 feet high; a rocky spit on which the water breaks, runs out for  $3\frac{1}{2}$  cables in an E.S.E. direction from its east end. The



coast runs to N.N.W. from this point, forming three little bays separated by two bluff rocky points, and then trends to the eastward towards Tuzhdán hill. A fort has recently been built near this place by the Gwádar Arabs.

**SOUNDINGS.**—The bay is clear of danger ; Ras Kamíti is steep-to on its north side, but shallow water extends 3 cables to southward, or between the point and a small islet to south-eastward. The depths are 8 to 9 fathoms between the entrance points, and thence it shoals gradually.

There is good anchorage in 4 fathoms, sand, with Ras Kamiti bearing S.S.W., and the Telegraph office East,  $2\frac{3}{4}$  miles off shore ; or on the other side in 4 fathoms, with Ras Píshkan South distant 3 miles, and the end of the breakers on the spit, S. by E.

There are 10 fathoms water at 2 miles outside Píshkan.

**Ras Gunz** is a bluff point, of light colour, about 200 feet high, forming the east point of a projecting higher piece of land called Katágar, the southernmost part of this coast. From Gunz the coast extends north, forming a large bay between it and Ras Píshkan, known as Bander Gunz, the west side of which is a succession of rocky points of cliff with sandy beaches between them, the north side being low as far as Píshkan. Singular hills rise a short distance from the shore and extend nearly to the Dasht river, having rugged peaks and pillars of clay, and north of these is the great plain or valley of the Dasht.\*

Ras Gunz is conspicuous from westward, but from eastward it is not easily made out. Small vessels find shelter in the bay in westerly winds, but it is quite open to the eastward.

**SOUNDINGS.**—The soundings in Bander Gunz are regular ; 10 fathoms are 4 miles off the bottom of the bay, and the anchorage is in 3 or 4 fathoms, about a mile off shore. Outside Ras Gunz there are 10 fathoms within a mile, and off Jiyúni at 2 miles, the water outside this deepening regularly but quickly to the edge of the bank about 12 miles off shore. Inside the 10-fathoms line there are overfalls of 2 fathoms at a cast off Ras Garnán, but no danger beyond one mile off shore.

**RAS JIYÚNI**, the west point of Katágar high land, and east entrance point of Gwatar bay, is distant  $7\frac{1}{2}$  miles W. by S. from Gunz ; it is a cliff about 100 feet high, and a line of cliff is nearly continuous between these places, having sometimes a sandy

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\* Natives say that a shoal exists off Gunz, called Kaharband. The author has searched for it in vain.

beach in front. At 2 miles to the eastward of Jiyúni, Ras Garnán, a low point of cliff, about 20 feet high, projects half a mile beyond the line of the higher cliffs, and is the southernmost point of the Makrán coast.

**GWATAR BAY**, or Dúhat Gwatar, also written Watar, is an extensive bay, nearly 16 miles wide between the entrance points, and 8 deep. The cliffs of Ras Jiyúni extend for 3 or 4 miles up the bay, after which the east side is sandy with rocky hills at a short distance from the beach; the whole north side of the bay is very low, with many creeks and mangrove swamps, extending some miles inland, the west tide being a succession of bluff points, with table hills over them, and sandy beaches between them\*.

The hills near the east shore are of even outline, but a little inland are of fantastic shapes, and a remarkable pillar, one of the highest, is very conspicuous all over the bay. Opposite the centre of the bay, and 9 miles inland, is a detached table-topped hill about 500 feet high, with sloping sides, called Kuh Darabúl, which is visible in clear weather outside the bay, and is the only land seen when crossing the bay.

**RAS FASTA**, a point of cliff 45 feet high, forming the west extreme of Gwatar bay, is the end of a detached ridge extending along shore for 6 miles to W.N.W., and rising out of the water, the point forms the south side of a small bay or bander, resorted to by native craft for shelter, the other side of which is formed by a higher and nearly parallel ridge of table hills, with precipitous sides, which forms several bluffs and points, ending just to southward of Gwatar village. At the back of these hills, and quite detached, stands a square rocky hill, 430 feet high, the top of which, seen over the lower hills in front, resembles a fort or castle, and is a very good landmark. All the rest of the country behind those hills is a low plain extending far inland. The point is in lat.  $25^{\circ} 3' 2''$  N. and long.  $61^{\circ} 25' 48''$  E.

At a mile East of Ras Fasta is an islet 108 feet high, table-topped, with a gap in it, and hardly quarter of a mile across. It has cliffs all round, and is rather difficult to make out against the cliffs behind, but shows well from the westward. It has rocky ground with one to 2 fathoms water all round at a distance of 3 cables, and there is a passage between it and Fastá, of 3 to 6 fathoms in overfalls. Ras Fasta may be approached to half a mile; there are 3 fathoms close in, but a detached bank or flat exists to southward of the point with 4 fathoms at about  $1\frac{1}{2}$  miles

\* See plan on Admiralty chart, Maskat to Karáchi, No. 38; scale,  $m = 0.5$  inch.

distance, and this spot requires examination. The passage north of the islet is clear, but Fasta bander is not adapted for a vessel drawing more than 12 feet; a larger vessel should anchor to the north-eastward of the islet.

**Rivers.**—Of the creeks at the head of Gwatar bay, already mentioned, the eastern one is Khor Jiyúni, and the next one is the mouth of the Dasht river, or khor, which is the largest river on the coast, running from N.E. through the district of the same name, the valley of Kej, and rising to the eastward of Panjgúr; it is tidal for 12 to 15 miles from the bay, and has not been examined. The western large creek, which enters the sea close to Gwatar village, is the mouth of the combined stream of two rivers, one of which flows from the northward, past Pishín, and through the district of Bahu; the other from the north-westward, past Kasrkand and the district of Dashtiyári. It has a shallow bar, and several fathoms water inside, being a tidal creek for some distance. The author found fresh water in this, after rain, some miles up. There are other creeks lying between these two, but not large ones.

**Jiyúni** is a village on the east side, about  $2\frac{1}{2}$  miles to the northward of the cape.\* The Dasht district, especially the part bordering on the river, has many villages, and is tolerably fertile.

**Gwatar** village is small and built of mat huts, with probably 200 to 300 huts. It stands near the creek already mentioned, where the inhabitants, who are fishermen, keep their boats. This place is under the chiefs of the Bahu Dashtiyári districts, who are tributary to Persia, and whose territory extends as far as Chahbár. Scarcely anything can be obtained either at this place or Jiyúni. There is little trade here of any kind.

**Tides.**—It is high water, full and change, in Gwatar bay at 9h. 30m., springs rise 8 to 9 feet.

**SOUNDINGS** in the bay are regular, over muddy bottom, decreasing from 6 and 7 fathoms at the entrance to 3 fathoms  $1\frac{1}{4}$  miles off the low land at the head. Ras Jiyúni is clear on its south side, but a reef extends half a mile off shore to westward of it, and in front of Jiyúni village. Off Gwatar village and the west coast there are 3 fathoms at half a mile distant, and no danger outside

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\* It is in the Dasht district, which is under Kej, and the coast from Píshkan to the Gwatar territory belongs

that distance. The soundings in Fasta bander, after passing the islet, are 2 to 3 fathoms, mud.\*

**GWATAR FLAT.**—There is a remarkable flat, extending a long way outside this bay, which is useful as a guide; it has 10 fathoms water on it at 10 miles distance outside the line of coast, and thence deepens gradually to 15 fathoms at 17 miles off, after which depth the edge of the bank is quite abrupt. The bottom is of white clay, very tenacious and gritty. The most projecting part is nearly opposite the centre of the bay, and the soundings on it are all regular.

This flat and the evenness of the bottom inside the bay are probably due to silt brought down by the Dasht and other rivers. After heavy rain the whole flat is much discoloured, and much drift wood will be seen.

**SOUNDINGS.**—Between Ras Fasta and Chahbár the soundings are very regular and the coast quite clear of danger; the bank of soundings is narrowest opposite Kháki kuh, where it is 7 miles wide, and 10 fathoms are only one to  $1\frac{1}{2}$  miles off shore from that point to Chahbár, the coast being steep-to, and soundings little guide unless taken quickly. Off Barís there are 10 fathoms at 3 miles distant, the bank here beginning to widen out towards Gwatar flat. The bottom is everywhere mud, in depths over 10 fathoms.

**The COAST.**—Ras Barís or Brís is the western extreme of a long line of perpendicular white cliffs with a perfectly level summit, extending 7 miles along shore, and estimated at 200 feet high. Between these cliffs and those of Ras Fasta is a gap of about 2 miles with low shore, and falling back within the line of cliff, which is nearly a straight line from Fasta to this point. To northward of Barís a small shallow bay is formed, in which are a few huts forming the fishing village of the same name.

Behind Ras Barís, and detached from the sea cliffs, is a mass of much higher, white clay hills, with very remarkable peaks.

The north side of Barís bay is low and sandy, and the coast thence trends to W. by N., continuing low and forming a slight concave as far as a dark hill of round form, standing close to the sea, with cliffs on its seaward face. It is 18 miles from Barís, and called by the natives Siya kuh; it may be 1,000 feet high.

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\* A British India steamer reported breakers about the centre of the bay, and outside of a line between the entrance points, and shoaled from  $7\frac{1}{2}$  to  $5\frac{1}{2}$ , but the author steered over the assigned position without finding any irregular soundings or indication of shoal water.

**Kinj river**, or khor, is the mouth of a small watercourse issuing through a gap in the coast hills to westward of Síya kuh, with a few date trees. To westward of this are rocky hills with cliffs adjoining the sea, forming a succession of small points and bays, as far as Chahbár point, the hills gradually decreasing in height towards that point. Inland of these coast hills is a great plain continuous with that north of Chahbár bay, and extending many miles to westward.

**Aspect of Coast.**—Barís cliff with the remarkable jagged range behind are easily known, Síya kuh can be distinguished by being of darkish colour, and between them, 9 miles inland, stands the ridge of mountains called Kháki kuh. It is 2,000 feet high, and of white clay, presenting a vertical face southward and extending some miles East and West. It has a deeply indented outline, and from westward forms an asses' ears peak, with a bluff to right of it. It shows white when the sun shines on it. The high land on the east side of Chahbár bay, of convex even outline, with cliffs at the north end, and nearly 1,000 feet high, is seen beyond Síya kuh. It is detached from any other hills.

**CHAHBÁR BAY\*** is a great bay or inlet,  $7\frac{1}{2}$  miles broad at the entrance, by 12 miles in depth. The shore on both sides is rocky with cliffs in places, to about 4 miles inside the entrance, but the whole of the rest is low and swampy, and seldom seen from a ship. A range of mountains runs about parallel with the coast 8 miles inland from the head of the bay. A high quoin-shaped peak on these, 2,400 feet high, and bearing North from about the middle of the bay, is the most conspicuous.

**Chahbár point** is low and rocky, with sand-hills, the coast to the eastward of it being of low cliff, and rising towards Kinj. Caution, in page 191.

**Chahbár town.**—On the extremity of Chahbár point is a small square tomb or mosque, and the coast thence trends to north-eastward for one mile, forming the south side of a little bay, at the bottom of which stands the town of Chahbár.†

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\* See plan on Admiralty chart, Muskat to Karáchi, No. 38; scale,  $m = 0\cdot5$  inch.

† Chahbár, by the Arabs also Shahbár, was taken from the Balúchis by the Arabs at the end of the last century, and held by them until dispossessed in 1872 by the Persians. Tis was burnt and plundered by the Portuguese at the same time as Gwádar and Pasni; it is described as a city, and Pasni as a "rich and beautiful city," doubtless an exaggeration, but as 50 vessels were burnt in the roads, it must have been of greater importance than now. See Manuel de Faria y Souza, Vol II,

The south side of this little bay is shoal, with rocky bottom, for 2 cables off shore, from the tomb on point as far as a little rocky point with a small date clump near it, just outside the fort. Beyond this the beach near the town is sandy; the best landing is near the date trees.

The land rises close to northward of Chahbár town to a high table land, already mentioned, the south brow is 840 feet high, and it is almost precipitous in places. Its base forms the north side of the little bay in which the town lies, with cliffs near the sea from  $1\frac{1}{2}$  miles North of the town to Tis point, a cliff of light colour, 210 feet high, which forms the north extreme from Chahbár anchorage. The cliff falls back north of this point, forming the south side of a great valley in the hills, and on the north side of this valley are higher hills, which trend to eastward away from the sea, leaving the shore low and swampy.

Chahbár was formerly a place of some trade. It has, since 1876, been reoccupied and rebuilt, having been deserted in 1873. The fort is square, with towers at the angles, built of mud and stone, and 300 yards from the shore, and around it lies the town. Close to southward of it are some gardens with many fruit trees, and a few date palms, extending for half a mile inland in a valley lying inside the coast hills. At a short distance to N.E. of the fort is a large white tomb with a dome, conspicuous from sea. This place has the reputation of being healthy.

**Telegraph.**—At half a mile South of the town is the Telegraph office, available for messages to all countries. It is a fine building with flat roof, and is seen across the land when to south-eastward of the place. It is the observation spot, and in lat.  $25^{\circ} 16' 43''$  N. and long.  $60^{\circ} 37' 48''$  E.

**Supplies.**—There is good water in wells among the gardens. Sheep and bullocks can be procured by sending into the country and waiting for them, also some vegetables, fish, &c.

**ANCHORAGE.**—The anchorage is with the tomb on Chahbár point South, and the white dome East to E. by S. in 4 fathoms, sand, one mile off shore. Native vessels anchor nearer in, about half a mile off shore, in 2 fathoms. (*See Directions.*)

**Tis.**—In the valley north of Tis point, about a mile from the sea, is a mud fort with a few huts and some trees and cultivation, the

\* There are some small excavations in the clay cliffs on the north side of the valley, which have been used as Hindu temples, probably not of any great antiquity. The entrance of the valley was formerly defended by a rough wall, now ruinous, built from the north cliffs to the water. The pass from the interior to Chahbár leads up this valley, and crosses the hill to the sea-shore just north of the town. Remains of the extensive old Muslim city which flourished about 900 years ago exist, and coins are occasionally found.

present village of Tis.\* At the entrance of the valley a small hill rises in the middle, on which the new Persian fort is built, and in front of this is a shallow lagoon, the entrance of which is a mile from Tis point. It is entered by fishing boats at high water only.\*

From Tis the coast is low and swampy all round the head of the bay ; at 6 miles from Tis point is the mouth of Khor Namak, a small river after rain.

**Ras Kuhláb**, also called Mutahaddim and Báragin, the west point of Chahbár bay, is of low cliffs, and has no reef off it ; from it the cliffs trend to North and N.W., increasing in height to a point of cliff  $3\frac{1}{4}$  miles to north-westward, which is 270 feet high ; from this the cliff falls back from the shore of the bay and runs to westward towards Pazim, low shore commencing in the bay north of this point ; inland of these cliffs it is quite low between Chahbár and Pazim bays.

There is good anchorage off Kuhláb point in north-westers in 4 fathoms half a mile off shore, with the point bearing South.

**SOUNDINGS.**—The depth at the entrance of Chahbár bay is 8 fathoms, and decreases regularly to 6 fathoms off Tis point, with muddy bottom. To northward of this point a rocky bank extends off shore from 2 to 3 miles, having  $2\frac{1}{2}$  to  $1\frac{1}{2}$  fathoms on its edge and 4 to 5 outside ; it extends to northward for 4 or 5 miles. Ras Kuhláb has 3 fathoms within a quarter of a mile, with 8 close outside, and the cliffs north of it are safe to approach to half a mile, but beyond them the west and north side of Chahbár bay are shoal, there being only 3 fathoms at nearly 2 miles off shore.

**DIRECTIONS.**—The Telegraph office at Chahbár is visible about 8 miles ; the coast on both sides of the entrance is safe to approach but is not easily seen at night, especially the two low entrance points, which are of light colour. In approaching from the southward, the lead should be kept going quickly, 20 fathoms being only 2 to 3 miles off ; in the day time the eye should be a sufficient guide, as the coast is bold.

**Caution.**—In rounding Chahbár point a vessel should not come under three-quarters of a mile, as a spit extends about 3 cables, outside which are rocky overfalls off the pitch or with the tomb bearing E. by S. At the above distance the water will shoal to 5 fathoms, hard bottom, on the tail of the spit, and then deepen to 7 fathoms, mud, when she should haul in for the anchorage.

**Tides.**—It is high water, at full and change, about 9h. 30m., springs rise 9 feet. The stream is not perceptible.

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\* This, with the town of Chahbár, has been made over to a tributary local chief by the Persians.

**CHAHBÁR to RAS MAIDÁNI.**—The coast\* from Chahbár to Sadaich river, which is 30 miles to the westward of Maidáni, is under the chief of Geh† who is tributary to Persia. There are several villages near the coast, and some cultivation; large numbers of camels are bred, also flocks of sheep and goats, wherever pasture is procurable.

**RAS PAZIM**, also written Fazim, is a cliff about 300 feet high, forming the west end of the Kuhláb promontory, which is similar in nature to the others on the coast, but the low isthmus is much wider. The hills, of which it is the western end, extend 11 miles in a W.N.W. and E.S.E. direction, and decrease in height towards their south-east end, which is only slightly elevated above the sea. Its summit is of uneven height, and the outline somewhat irregular.

**Ras Gurdím**, called also Ráshidi, is another similar promontory, but quite table-topped, and nearly level; it is 150 feet high, almost inaccessible on all sides, and extends 6 miles, nearly east and west, by only one in breadth, and it is joined to the main by a low sandy isthmus. Between this point and Ras Pazim a deep bay is formed with low sandy shore, 5 miles wide between the points. In this bay behind the eastern promontory is the little fishing village of Pazim, and on the west side there are a few huts on the sandy isthmus behind Gurdím. At  $1\frac{1}{2}$  miles to N.E. of these is a salt-water creek, the mouth of Kair river, which has a long course from the interior running past the town of Geh. The village and district called Kair are on the right bank of this river, 4 or 5 miles inland, where there is much cultivation.

The west point of Gurdím headland is somewhat higher than the eastern, and is also a vertical cliff; it has a bay to the northward of it, and the coast is of low sand-hills from thence to Ras Tank, forming a slight bay.

Inland of Gurdím and Pazim the great plain continues, with a few villages or settlements, and at about 12 miles from the sea are mountains running nearly parallel with the coast, part of the same range seen at Chahbár. In front of these are some lower hills, one of which, of conical form and 6 miles inland, is called Kuh Milín.

**Pazim bay** has 5 fathoms water in the entrance, decreasing regularly to 3 fathoms at one to  $1\frac{1}{4}$  miles off the low shore at the bottom. Ras Gurdím has 4 and 5 fathoms within half a mile outside,

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\* This district is sometimes called Kibla, with reference to its situation as the westernmost part of Makrán.

† This chief is also over those of the Bahu and Dashtiyári districts.



and has no reef off it. Ras Pazim has 5 fathoms at one mile off, and the whole headland between it and Kuhláb point may be approached to that distance safely.

**Anchorage.**—A vessel may anchor in this bay in 4 fathoms, mud, with Gurdím east extreme bearing S.S.W.

**BÁKLANG ROCK.**—A dangerous isolated rock dry at low water, and called by the fishermen Báklang,\* lies  $2\frac{1}{2}$  miles S.E.  $\frac{1}{2}$  S. from the east point of Gurdím; it has 6 fathoms close to all round, and is about half a cable in extent. When the water is smooth it does not show at all. The following leading mark leads directly over the rock. The low brown hills to eastward of Ras Tank, half their breadth open from the west cliff of Gurdím. In clear weather a sharp asses' ears peak on Kuh Kalát, called Bir, will be then seen in the gap between these marks, the right hand of the two highest peaks being on with Gurdím west cliff, and three only being visible. When just outside the rock a fourth peak of the Bir hills opens out from Gurdím.

A ridge or tail without any danger extends some distance to southward from this rock, deepening gradually; there are 14 fathoms water on it at 4 miles off, after which the edge of the bank goes off quite steeply, there being no bottom at 3 miles farther out. On either side of this ridge there are 20 to 30 fathoms, when 14 fathoms are got on the bank. By night a vessel should not approach Báklang rock under 20 fathoms soundings.

**RAS TANK** is a small rocky peninsula with sand-hills about 30 feet high which projects beyond the line of coast, and is joined to the main by a strip of sand only 50 yards wide. The east rocky corner is in lat.  $25^{\circ} 19' 49''$  N. and long.  $59^{\circ} 54' 4''$  E. It is three-quarters of a mile in extent East and West, and there are no huts visible from the sea; the hamlet of the same name being about 3 miles up the large creek or river, a branch of the Kair, which enters the sea close to eastward of this point. The bar of the river is shallow but sheltered by the cape; there is deep water inside, where it is a quarter of a mile wide. The river runs to north-eastward near its mouth, and close along inside the coast sand-hills. It is frequented by fishing boats from Maskat, which trade with the village, and with people from the interior; they bring dates, cotton cloth, &c., and take away pish, and ghee, &c.

\* The author was informed by the fishermen, who pointed out the position of the rock by *transits of objects on the land*, that many native vessels were wrecked on this dangerous rock. It is also called Bankalink.

Ras Tank is safe to approach on the south side to half a mile, or in 7 fathoms, there is a small spit and shoaler water off the east end of the peninsula, where 4 fathoms will be found a mile off with the point bearing West. The little bay on the west side is shallow, and shoal water extends about a mile to the westward of the point, but there is no shoal water outside the line of the cape.

At 4 miles to north-eastward of Ras Tank is a small group of brown coloured hills of irregular shape, and lying 2 miles inland; from a distance they may be mistaken for Ras Tank. A few large trees and some date palms are seen to the westward of these hills.

**Soundings.**—The bank of soundings is only 6 miles wide off this point, and at night a ship should not come under 30 fathoms; in fact the lead is of little use unless kept constantly going; the low point is difficult to make out.

**Anchorage.**—A vessel might anchor in 5 fathoms, 4 cables to south-east of the cape, a small vessel, drawing 5 or 6 feet, might enter the river, but it would require to be previously buoyed.

**Aspect of Coast.**—Ras Tank is not visible more than 6 or 7 miles, and the coast range of mountains, 15 miles inland, is lower and less conspicuous here, and also between this place and Maidáni. The above little brown hills are a good land-mark, and to westward of the cape a great ridge of white clay cliffs of most striking outline extends for some 20 miles parallel to the coast, and about 6 miles from the sea. The range is called Kuh Kalát, and the highest part of it Bir, probably after a small district of that name which lies to northward of the range. It is 1,680 feet high, and cannot be mistaken, although it is difficult to identify any of the peaks, as they change much in appearance from different points of view; they are visible 40 miles.

**Ras Tank to Ras Maidáni.**—The coast has a north-west direction for 3 miles from Ras Tank, and there are cliffs near the sea, forming the termination seaward of some low table hills lying north of that cape; it then trends to westward, forming a slight bay, to a bluff point on the coast about 100 feet high called Makki, which is 17 miles from Tank; the intermediate shore being low. Hamdán, a hamlet and grove on a creek, lies close to eastward of Makki.

Between Makki and Ras Maidáni is a long extent of low sandy shore, with creeks and backwaters inside, forming the mouths of a river of considerable size, which has a course from the interior of more than 100 miles. There are two mouths, Khor Rabíj\* and Khor Gálag, the

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\* See Admiralty plan, Khor Rabíj, No. 39; scale  $m = 3$  inches.

former of which, called also Rapch or Rafch, is 7 miles east of Ras Maidáni. Owing to its large tidal backwater this is the more considerable of the two, but the bars of both are shallow, although they have deep water inside. Rabíj might be used by small vessels, if buoyed, but the country near is a desert, and it is at present of no practical importance, being only frequented by fishing boats. Khor Gálag, about 6 miles to the eastward of Rabíj, has a small village near the mouth, with a few boats belonging to it.

A spit extends off the entrance of Khor Rabíj for upwards of a mile, on which the water breaks; the Gálag creek is smaller, and only entered by boats at high water. Inland of Rabíj is a small district with several hamlets and groves of date palms, called Karwán.

**RAS MAIDÁNI** is a broad cape, having a sea face of about 5 miles, lying East and West; the eastern half has cliffs 155 feet high, close to the sea, the western part being a low sandy point with small bushes. The hills which end in these cliffs are table-topped, about 200 feet high, and of brown colour, with white cliffs. They end 3 or 4 miles inland, and on either side of this lump of high land the coast is low for many miles; at the back of them, the great plain adjoining the sea continues and extends about 60 miles to the westward. There is a large date grove to westward of the cliffs, at a little distance inland.

**SOUNDINGS—CAUTION.**—Off the east end, where the cliffs are, there is no danger, 3 fathoms being only half a mile off shore, and the soundings regular, but from the low west point, a shoal flat extends 3 miles off shore to south-westward, having at that distance only 3 fathoms on its edge with  $2\frac{1}{2}$  close inside; bottom clay. As there are 200 fathoms at 5 miles outside this flat, caution is required in passing this point, especially at night. The soundings between Ras Tank and Ras Maidáni are regular, the edge of the bank averaging 15 miles from the bottom of the bay between the capes; the shores of the bay may be approached to  $1\frac{1}{2}$  miles in 3 fathoms water. In passing along the coast, 20 fathoms will be a good depth anywhere to eastward of Ras Maidáni, but off the flat, the soundings are little guide.

**Ras Maidáni to Ras Jagín.**—Between these two points the shore is very low, and forms a slight bay; the only hills near the sea being a small cluster of table-topped peaks, called Kuh Gukardi, about 17 miles to north-westward of Maidáni, and 200 feet high; they stand about 2 miles from the sea, and are not seen unless the vessel is standing well into the bay.

To westward of these is the Sadaich river or khor, which, like all the others on the coast, is a tidal creek with shallow bar, the ground near the mouth being swampy.

The course of this river from the mountains is not known ; it is the boundary of the Geh territory, or Makrán\* proper, the country to the west of it being named Báshakird, a very mountainous district, and little known ; the narrow plain between the coast and the mountains is called Biyában, and belongs to the chief of Jáshak, who is under the Persian government.

On the banks of the river, some distance inland, is the district of Sadaich, with a village, date groves, and some cultivation.

A trade is carried on here by boats from Maskat, some of about 50 tons burden, which take away pish, mats, salt fish, &c.

**ASPECT.**—The coast range lies 12 to 14 miles inland, having a quoin-shaped mountain with a great valley on its west side at 28 miles N.N.W. from Maidáni ; this range approaches the coast westward of Ras Jagín, and is not further remarkable in outline. Inland of this range stands the great mountain called *Jebel Sháhu* or *Gúhkuh*,† 6,400 feet high, and visible 80 miles. It is apparently nearly detached from any other mountains and stands 30 miles inland. From the south-eastward it forms with a great bluff on its east side, the top sloping to westward, but from the westward the bluff is not seen, and it has a rounded shape. It cannot be mistaken, being so much higher than any of the other land.

**Súraf**, a range of white sand-hills, which have no vegetation, are about 100 feet high, and extend from the Sadaich river for 6 miles along the beach to westward. Water is found by digging in the hollows of these sand-hills.

Beyond these the coast is very low, with mangrove swamps and numerous creeks, as far as Jáshak east bay. All these creeks have names, and are resorted to by boats to cut firewood, and to fish in, &c., but are not of any importance ; they are all mouths of streams from the Báshakird mountains ; the Gabríg and Jagín rivers are the principal ones.

**RAS JAGÍN‡** is a very low rounded sandy point with small tufts of grass growing on it ; the mouth of Jagín creek or river is at

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\* On the first range of hills near this river is said to be a pillar, called *Malik Chedár*, an ancient land-mark on the boundary line of Makrán, the words mean *King's pillar*.

† A Balúch name.

‡ See Admiralty chart, Persian gulf, No. 2,837a ; scale,  $m = 0.08$  of an inch.

the point, and sands, dry at low water, extend more than half a mile off it to S.W. Inland of Ras Jagín is a mangrove swamp several miles in extent, the delta of the river, and there is a plain beyond that to the foot of the hills. As the low point is only visible 3 or 4 miles, a ship should not be misled as to her distance off by the appearance of the distant hills. The edge of the bank of soundings is only 4 miles off this point, which therefore requires a wide berth at night; it is not easy to make out the point, even when close in, as it is not well defined, and by day the eye is the best guide. From the spit off it Jebel Sháhu bears N.N.E.  $\frac{1}{2}$  E. From this point to Súraf the shore runs nearly straight.

**SOUNDINGS.**—The soundings between Maidáni and Jagín are regular; in the centre of the bay the edge of the bank is 19 miles off, shoaling to 20 fathoms at 5 to 7 miles, and 3 fathoms at  $1\frac{1}{2}$  to 2 miles, but near Jagín the water is deeper, and off that point there are 18 to 20 fathoms within a mile, so that the lead is little guide, and caution is required when passing it.

**RAS JAGÍN to CAPE JÁSHAK.**—The coast between these points forms a great bight, known as Jáshak East bay, which has deep water, there being 20 fathoms at 2 to 3 miles, and the 100-fathoms line at 3 to 6 miles from the shore.

**Jáshak East bay.**—The east side of this bay is low, being a continuation of the land east of Jagín, the sandy beach drying off upwards of half a mile opposite the entrances of the creeks. Khor Lash is a large creek 7 miles N.W. of Ras Jagín.

At the head \* of the bay the hills approach within a mile of the coast, and the coast range ends here in a ridge of white cliffs, highest part 1,720 feet. It is called Kuh Ushadán, after a small hamlet, with a few date trees, lying between it and the sea; from the westward it has a quoin shape.

The west side of the bay is rocky, about 20 feet above the sea, and level, with sandy beach and low cliff in places. It extends in a nearly straight line from Jáshak point to the head of the bay, in a direction N.E. by E.  $\frac{1}{2}$  E.

**Anchorage.**—There is a good anchorage and shelter in westerly winds all along this side, close in, in 6 or 8 fathoms, the 20-fathoms line being only 2 miles off shore. It is open to the eastward, and there is always a light surf on the beach, which becomes heavy

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\* In this bay, and about 3 miles to eastward of Ushadán, are some hot springs on the sea shore at high-water mark, temperature 128°.

during the monsoon, although the swell is only slightly perceptible as a ground swell.

**MAKSA**, called also **CAPE JÁSHAK**,\* is the south-western extreme of a low projecting cape dividing the bay just described from a great bay on its west side, known as Jáchak bay. There is a small rudely built tomb,† 25 feet above high water, on the extreme point.

There is a little rocky point in Jáchak bay half a mile north of the tomb, beyond which the coast forms a small bay, where there is good landing only a quarter of a mile north of the telegraph office, and between this point and the old tomb is a small rocky flat extending 8 cables off shore, with 3 fathoms on its outer edge, and  $2\frac{1}{2}$  close inside it.

**Telegraph.**—A fine range of flat-roofed telegraph buildings has been built one-third of a mile to N.E. of the tomb, which are visible 9 miles, and form the best mark for making the place. Messages can be sent from here to all parts. The telegraph cables extend seaward from a house close to the shore in East bay. A flag is hoisted on a tall flag-staff near the office, and a blue light at night would be answered and a light is shown when previously arranged for by telegraph or letter. The superintendent's house is in latitude  $25^{\circ} 38' 19''$  N., and longitude  $57^{\circ} 46' 25''$  E. (observation point).

A fort has been built by the Persians near the landing place in west bay.

**Supplies.**—The best water is got from wells, one mile N.E. from the telegraph office, near two small date clumps, known by a large water tank, roofed in, erected on posts near the well. There are two banyan trees to north-eastward of the telegraph office, distant  $1\frac{1}{4}$  and 3 miles, near which are some herdsmen's huts, and other wells. A few fishermen live on the point, and fish is plentiful.

A small village has sprung up since the establishment of the telegraph station, and a few supplies can be got, such as sheep, fowls, vegetables, and various articles used by Europeans, but not in large quantities.

There is fortnightly communication by the Persian gulf mail steam vessels with India and the gulf.

**ANCHORAGE.**‡—The anchorage on the east side of cape Jáchak is good during a shamál, but in a winter easterly gale it would be

\* This name is often pronounced, and sometimes written, Jách or Yách, also Jashk.

† Of a Mussulman saint, called Shaikh Sayed; it is of some antiquity, for the master of the ship *Rocbuck*, of London, states that on the 15th December, 1620, they saw cape Jasques (*sic*), having upon it a tomb, or old square flat-roofed house. See Purchas I., 723. Around this is an ancient burial ground, which is being gradually encroached on by the sea.

‡ See plan on Admiralty chart, Maskat to Karáchi, No. 38; scale,  $m = 0.6$  inch.

quite exposed. If riding out a shamál the wind would be about west, and much swell rolls round the point, making the ship very uneasy. A vessel to avoid fouling the telegraph cables, which are landed at a small square building on the east beach, should not anchor westward of the line of the stone obelisk near the cable house in line with the station flag-staff, which is 80 feet high. The beacon is 30 feet high, and painted in black and white bands. The best landing place appears to be at the commencement of the sandy beach near the cable house. The landing is bad on this side, the beach being rocky, and there is always more or less surf, for which reason it is preferable generally to anchor, or for boats to land in West bay.

**Draught of vessels.**—On the west side of cape Jášhak, a convenient anchorage for a vessel not drawing more than 15 or 16 feet is with Jášhak point bearing South in  $3\frac{1}{2}$  fathoms, and half a mile off shore; in entering this anchorage she will pass over 3 fathoms, or somewhat less, at low water: a larger vessel must anchor a mile to N.N.W. of the above berth. A sailing vessel in months December to March should be able to weigh and move round the point if a heavy shamál (or north-wester) set in, of which she might get warning by telegraph from Bushire. *See* page 11.

To stand in to this inner anchorage, a beacon has been put up on the shore, which is to be kept in a line with the tank at the wells, and bearing E.  $\frac{1}{2}$  N. Ships generally get the telegraph buildings on some particular bearing to anchor. A very good mark is the main telegraph building end on. The beacon is made of three posts with a large square board, black with white disk.

**Jášhak West bay.**—From the landing place near the telegraph office the shore is of low sand-hills, and runs to northward for  $3\frac{1}{2}$  miles to the entrance of a small creek, it then curves round to the N.W. and westward, having sand-hills for the first 3 miles, after which it is a mere strip of low sand all the way to Ras al Kuh, with mangrove swamps inside it, and admitting several creeks; the largest of these, called Khor Hamad, is 8 miles east of Ras al Kuh, and is frequented by boats. At a considerable distance inland are seen many date groves scattered along the coast. The bar of Jášhak creek is nearly dry at low water, and it has dry sands nearly half a mile off the mouth, but the water is deeper inside, and it is used by native boats. It has a winding course of 4 or 5 miles, and the land near it is a mangrove swamp.\*

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\* Jášhak bay was the rendezvous of the English ships trading to Persia before the Portuguese were dispossessed of Hormúz.

**Jáshak** fort is  $6\frac{1}{4}$  miles N.  $\frac{1}{4}$  E. from the old tomb; it was a small square mud fort, now quite ruinous, with a few houses and date trees near it, and a range of white sand-hills to south-eastward. It stands one mile from the coast, and can now hardly be seen from the sea. There are about 200 men here, all cultivators and herdsman. A small traffic with Maskat is carried on, which was formerly more important. A Persian official is now in charge of the district.

**Tides.**—It is high water, full and change, at 9h. 30m., rise and fall 9 feet. The stream is weak, the flood setting to the westward; it increases in strength as Ras al Kuh is approached.

**Current.**—During the south-west monsoon a current setting N.N.W. about one mile an hour may be experienced between Ras al Hadd and Jáshak.

**SOUNDINGS.**—The soundings south of cape Jáshak are 50 fathoms, mud, at 2 miles, which depth is close to the edge of the bank; under one mile from the point are rocky overfalls, but no danger, there being 5 fathoms within a quarter of a mile. To westward of the point, outside the little spit, is a rocky flat, which extends 4 miles from the cape, deepening from  $3\frac{1}{2}$  to 7 fathoms with overfalls, after which the water deepens rapidly.

The soundings in Jáshak bay are regular after passing the rocky flat off the point, but shoal, there being only 5 fathoms at 3 miles off, bottom mud. There is a flat 2 miles to W.N.W. of the point with 3 fathoms or perhaps only  $2\frac{1}{2}$ , and with  $3\frac{1}{2}$  and 4 between it and the point.

Between this and Ras al Kuh the bank of soundings widens to 14 miles, contracting again off that point, where 100 fathoms are only 7 miles off. The water is shoal near the coast, 3 fathoms being one to  $1\frac{1}{2}$  miles off, except at Ras al Kuh, where there are 20 to 30 fathoms at that distance. The bottom is also somewhat irregular, there being several rocky overfalls, but all with deep water over them, except the following:—

**MASON SHOAL.**—Near the edge of the rocky flat which extends westward off cape Jáshak, and  $3\frac{1}{4}$  miles W. by S.  $\frac{1}{2}$  S. from the old tomb, is a small bank called Mason† shoal, which is a mile in extent, and has only 3 fathoms in one place, bottom rock, coral, and sand; it is steep to on the south and west sides.

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† From Lieutenant Mason, I.N., who discovered it in 1857.



**GAHHA SHOAL.**—A small 9-foot patch with soft bottom lies 3 miles off shore,  $16\frac{1}{2}$  miles from cape Jáshak, and 10 miles from Ras al Kuh. It is less than a ship's length in extent, and has 13 fathoms close to all round. A vessel should not shoal to less than 20 fathoms when passing this danger. From it, Kuh i Mubárah hill bears N.W., and Jebel Khor Hamad N.N.E.; or, the west end of the latter hill is on with a remarkable valley or gap in the hills to westward of Bahmadi mountain. It is known to the natives as Gahha.\*

**Caution** is necessary in navigating this portion of the coast, as the land is low, and error in judgment of distance from it probable.

**ASPECT of COAST.**—There are several remarkable mountains and hills on this part. Jebel Dangiyya or Quoin hill, an isolated mountain 1,630 feet high, is a very remarkable land-mark N. by W.  $\frac{1}{4}$  W.,  $12\frac{1}{2}$  miles† from Jáshak point, it has a great bluff to the westward, and cannot well be mistaken, as it shows well against the land behind; it is visible 40 miles, and there is a great valley between it and Kuh Ushadán, behind which are seen more distant ranges; from the westward it is less conspicuous. Separated from Jebel Dangiyya by a valley or gap with precipitous sides, is a remarkable high mountain, 3,100 feet high, called Jebel Bahmadi, whose summit is 7 miles N.W. by N. from the Quoin; it has a long slope to westward, and a very serrated outline. On its southern slope is a singular pillar of rock  $3\frac{2}{3}$  miles N.W. by W. from the Quoin hill, which can be generally seen on a clear day when abreast of Mason shoal. The mountains hence trend to the north-westward, leaving a valley between them and the coast ranges near Ras al Kuh. From Jáshak, Jebel-Bis (page 204) is seen through the valley between Quoin hill and Bahmadi.

**Jebel Khor Hamad** is a narrow ridge of hills about 300 feet high, extending nearly 2 miles east and west, with cliffs to the southward; they stand 4 miles from the sea, and 9 miles W. by S. from Quoin hill. It is a mark for Gahha shoal.

**RAS AL KUH** is a very low point, at which the coast suddenly changes its direction to N.N.W. The extreme is in lat.  $25^{\circ} 47' 23''$  N. and long.  $57^{\circ} 18' 49''$  E. All the land for several miles inland is swampy, except the low strip of sand with tufts of grass forming the shore. A small creek, frequented by boats, has its mouth close

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\* This is the shoal described in Horsburgh, Vol. I., p. 424, 8th edition, as a rocky shoal, and there called Kuh i Mubárah shoal. It has been examined and fixed by Capt. Stiffe.

† When the highest part is in transit with the old tomb it bears N.  $13^{\circ} 48'$  W. true, which bearing may serve to adjust compasses.

to northward of the point, having dry sands 3 cables off its entrance. The date grove of a small village is seen to north-eastward, distant 2 to 3 miles.

**Anchorage.**—The point is steep-to ; a vessel can anchor a mile to eastward of the point, and half a mile off shore, in 6 to 10 fathoms, but there is not much shelter during a shamál, which blows here about W. by N.

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## CHAPTER IX.

NORTH COAST OF PERSIAN GULF AND GULF OF OMÁN.  
RAS AL KUH TO RAS BISTÁNA.

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 VARIATION  $0^{\circ}00'$  in 1890.
 

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**GENERAL OBSERVATIONS.\***—This coast has ranges of mountains of great height extending its whole length, at a short distance from the sea, forming good landmarks. There are numerous villages and towns along it, with a mixed Persian and Arab population; the fishermen, or seafaring portion, being Arab, and the cultivators, &c., chiefly Persian. Most of the towns have date groves, and a small amount of cultivation near them, but other trees are few and small, except at a few places, where a banyan tree is met with.

**The Coast** as far as Gurú is very low, there being a plain of varying width between the mountains and the sea. It is deep-to, and soundings are little guide. Supplies are not obtainable, as the villages are poor, and are some short distance inland. There is no shelter in a shamál, and the anchorage is bad, being close to the shore. As the coast is low and visible only a short distance, a stranger, seeing only the hills, is frequently misled as to his distance off shore. It has not been minutely examined.

**KUH I MUBÁRAK** is a very remarkable precipitous rocky hill, 330 feet high, and of cylindrical shape like a hat, standing quite isolated in the swampy plain,  $3\frac{1}{4}$  miles North of Ras al Kuh, and about one mile inland. It is of light colour, and has a small hole in its upper eastern corner, which can be seen through when bearing N.W. It is visible 18 miles, and forms a good land-mark for the

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\* See Admiralty chart, Persian gulf entrance, No. 753; scale,  $m = 0.2$  of an inch; also, Persian gulf (general chart), No. 2,837*a*; scale,  $m = 0.08$  of an inch.

corner at Ras al Kuh: it is very conspicuous except when seen against the light-coloured hills behind. On a bearing N.W. or S.E., when the low land is down, it looks like a rock standing in the sea.

**RAS ASH SHIR** is 14 miles N.N.W. from Ras al Kuh, the coast between them forming a slight bay. It is a very low point, with one or two huts on it; at low water it dries off nearly half a mile from high-water mark. At  $2\frac{1}{2}$  miles north-eastward is a small village, with a few date trees, called Tújak. The nearest range of hills, 3 miles distant from the point, and running about parallel to the coast, is of light colour, and at  $3\frac{1}{2}$  miles E. by S. from the point has a peak on it, making in a quoin shape from the north or south, and a good mark for ash Shir point. It is 720 feet high, and only  $1\frac{1}{4}$  miles from the shore of the bay on the south side of this point. This ridge decreases in height to the southward, ending about 3 miles eastward of Kúh-i Mubárák. The coast between the hills and the sea from this place, as far as Mínab (Mínau) on one side, and Jáshak on the other, is called Biyában; and the mountainous district farther inland, from Ras Jagín to Mínab is called Báshakird.

**CAUTION.**—A 2-fathoms flat of sand and mud extends 2 to  $2\frac{1}{2}$  miles off this point. There are 20 fathoms at  $1\frac{1}{2}$  miles from the edge, and the soundings decrease regularly but rapidly on to it; so that unless the lead were going quickly, a vessel might easily run on it, the point being so low. By day, the discolouration of the water indicates approach to a shoal, but by night it would not be safe to approach the edge of this flat.

**JEBEL KARYA**, 1,910 feet high, is a remarkable peak of light colour, 11 miles N.N.E. of Ras ash Shir, forming part of the second ridge of hills from the coast; when abreast of it, it makes with a jagged outline, but from the north or south in a fine peak steepest on the east side, in fact, almost precipitous; the long range of hills it rises from being a sharp ridge. Karya is visible 45 miles.

**JEBEL BIS**, 4,600 feet high, is  $14\frac{1}{2}$  miles E.  $\frac{1}{2}$  N. from the last. It is a great peak on the back range, visible 70 miles, and conspicuous on all bearings, except near the shore, when it is often hidden by lower ranges; from the northward or southward it has a conical form. This range extends to the south-eastward towards Sháhu, and also a long distance to northward, and there is a great valley between it and the Karya range.

**The COAST.**—At 12 miles N. by W.  $\frac{3}{4}$  W. from Ras ash Shir the coast projects, forming a very low point, mostly overflowed at high

water, called Ras Kunári; there are many mangroves, and about 4 miles northward of it is the entrance to the creek of the same name, used by boats of 20 tons burden. This is the nearest part of the Persian coast to the opposite promontory of the Ruús al Jebál. The town of Kunári lies some distance inland, and is said to be a fort and town about 11 miles from the mouth of the river. There are 20 fathoms 2 miles off this low point, and it would not be advisable to approach it by night, or in thick weather.

From this point the direction of the coast is N.  $\frac{1}{2}$  W. for 24 miles to the village of Gurú. The low coast continues for many miles above Ras Kunári, but a few miles south of Gurú sand-hills begin, and continue for some distance northward of that place.

**Gurú** is a small village and fort about half a mile from the coast, with a date grove. The people appear almost entirely agricultural, but a few fishing boats were seen hauled up in a little creek formed by a watercourse. The fort is of white colour, and seen well from seaward in the afternoon. The sand-hills are 30 or 40 feet high opposite this place; the country inside them appears well cultivated. About 3 miles South of this is the small village of Táru, with many date trees.

The nearest range of hills is here about 3 miles from the shore, of irregular outline, but has no remarkable peaks. There are 4 fathoms water at one mile off shore at this place, outside which it deepens quickly.

**DIRECTIONS** for the coast from Jášhak to Gurú and Hormúz.

**Tides.**—The tide-stream is little felt before approaching Ras al Kuh; it sets strong round that point, and along shore north of it, 2 knots at springs. The time of high water is approximately 9h. 30m. to 10h., the stream running about 3 hours after high or low water.

After passing Jášhak the Arab coast would be seen; and in very clear weather even before reaching that cape. Care must be taken in passing Mason shoal,  $3\frac{1}{4}$  miles W. by S. from cape Jášhak; at that point and Ras al Kuh, the soundings are too deep to be much guide to a vessel; but 25 fathoms would be a safe depth between them, which will take her 2 miles outside Gah ha shoal.

North of Ras al Kuh, a vessel ought not to come under 30, or by night 35 fathoms, till past the low point of Kunári, when she may stand in, if a working breeze, to 8 or 10 fathoms by day, or 15 by night, as far as Hormúz island. With a fair wind, by keeping in 40 fathoms by night she would round the Quoins at a proper distance; if she deepened her water to 50 or 60 fathoms, she might

get too near those islands, if a thick night ; by day, the eye is a good guide ; 7 or 8 miles is a good distance off them for a sailing ship.

It is not advisable for a sailing vessel to approach the coast near Gurú, or between it and Hormúz if a shamál is likely to set in, as that wind blows here at W.S.W. with a very bad sea, and it would be dangerous to become embayed between Gurú and the Khor Mínu. No native vessels visit the coast, except such as can either be hauled up, or get into the creeks. Hormúz is the only available place of shelter, unless a vessel was far enough to windward to fetch into Kishm road.

**GURÚ to BANDER ABBÁS.**—The hills recede from the sea, leaving a large level district between them and the sea, from 10 to 20 miles or more in width, some parts of which are fertile. The coast, except just above Gurú, is quite low and swampy, with mangroves in places. The 3-fathoms line is about 2 miles off shore ; and there is no danger on the coast. This part, as far as Hormúz, is seldom visited by Europeans. Inland of this part of the coast are very high mountains, on which snow lies for some months.

**Kuhstak** is a village on the coast, about 14 miles N. by W.  $\frac{1}{2}$  W. from Gurú, and may be recognised by the fort, which stands on a little isolated hill or rock, close to the eastward of the village, and is 80 to 100 feet high. There are some date trees round it ; the inhabitants are chiefly fishermen. Half-way between this place and Gurú, a low spur of the coast range of hills comes close to the sea, called Kalla (*i.e.*, the point) by the boatmen. At Kuhstak, the nearest hills are about 2 miles from the coast, and hence they fall back north-north-eastward, the plain between them and the sea increasing in width to the northward.

**Khagún** is a small village with very few date trees, containing about 150 men, chiefly fishermen. It is on the coast about 6 miles N.N.W. of Kuhstak. The shore is low and sandy on both sides of this village, and the date trees and a tower in the village are the first things seen. There is a small creek here for boats.

**KHOR MÍNAU** is a salt-water mangrove creek, the entrance to which is 17 miles E.  $\frac{1}{2}$  S. from Hormúz fort. The bar is nearly dry at low water, and it is visited by boats not exceeding 20 tons burden, which come from Kishm and Bander Abbás. At its head is the port of the large town of Mínu (Mínab) which carries on a considerable trade with those places. A great many boats, all of the size mentioned above, are employed in the trade ; during a shamál

no boats can enter or leave, and some are annually lost on the bar. There are many similar mangrove creeks on both sides of this one, which is recognised, by the Arabs, by two large mangrove trees close together, a short distance to the southward of it. The creek runs from the bar N.E. for about  $1\frac{1}{2}$  miles, through sand and mud flats, overflowed at high water; it then enters between banks grown with mangroves, and turns to S.E. for 2 miles, and then to E.N.E. for 4 miles more to the head, where the boats lie; its banks are everywhere flooded at high tide, and it decreases in size till it becomes a mere mud ditch at the head. There is a mud building here called Shahbander, or custom house, but no other permanent building, the ground around it being occasionally flooded. The merchandise is carried between this place and Míнау on camels and asses. At certain seasons, as many as twenty boats arrive and leave in a day.

**MÍNAU or MÍNAB.**—This town lies  $11\frac{1}{2}$  miles E. by N. of Shahbander; the road to it for the first 2 miles is over the mud flat around the custom house, and after that through date groves and gardens great part of the way, with several small villages scattered among the trees. The fort of Míнау is on a spur of hills, on the lowest and first range from the coast, and is large and imposing, being built up the hill enclosing a space of 200 to 300 yards square; but the materials being only sun-dried bricks, it is very dilapidated; there is a moat on the west side; on the south, a scarped ditch prevents access from the hills, and on the east and north it is washed by a small river. This stream here enters the plain from a gap in the hills; in floods its bed must be half a mile wide, judging from the boulders and rolled stones; but generally only 60 or 70 yards across, and about 2 feet deep. The water is clear and limpid, it flows to the southward from the fort, and, in its ordinary state, is absorbed in irrigation; but in floods it enters the sea somewhere near Khagún, as we were informed. As it has to be forded on the road from the Bander the communication is quite cut off during floods.

The bazaar, which is well supplied, is without the fort, but inside the moat; the rest of the town consists of mat huts; and on the south side of it are extensive gardens and plantations. The district is under an Aga, who is under Bander Abbás; the people are well disposed to Europeans. The district produces much corn, which is exported to Bander Abbás; dates, vegetables, fruit, as melons, limes, &c., with sugar cane, and sundry other articles. The imports are rice, piece goods, dried fish, &c.; and exports, corn, wool, ghee, dates, &c.

**MOUNTAINS.**—Behind this place are two remarkable peaks on the back range, about 3,000 feet high; the northern one has a very jagged outline, and the southern, called on the chart, Overhanging peak, is a very sharp pinnacle, of about the same height, and, when bearing N.E., forms in the shape of asses' ears. These two hills are at either end of a long level topped range. Jebel Shimíl, 8,500 feet high, is a grand mountain, 30 miles from the coast, and visible 100 miles. It lies N.E. of Bander Abbás, and is very conspicuous from the entrance of the gulf, being seen below Umm al Faiyarín. Its top forms in a bluff at the west side, and to the east of it, on a lower part or spur of the mountain, is a remarkable cone, about 5,000 feet high. Jebel Ginao, 7,690 feet high, is 16 miles N.N.W. of Bander Abbás.\* It forms a grand detached mountain mass, of irregular outline, with no very marked peak, and is visible 90 miles. There is a great valley between it and Shimíl, through which is seen, in clear weather, a great mountain, called Jebel Bakhún, rising to a height of 10,660 feet, which is 42 miles N.  $\frac{1}{2}$  E. from Bander Abbás, and makes with three little peaks. It is covered with snow during many months.

The **COAST** from the Khor Míнау runs in an average direction W. by N. for 26 miles to Bander Abbás. It is all low, desert, and swampy, and the eastern part covered with mangroves; there is a mud flat off the whole extent, and 3 fathoms are about 2 miles off it. Nine miles eastward of Bander Abbás the coast projects, forming a low point opposite to the island of Hormúz.

**JEZÍRAT HORMÚZ** is an island of circular shape, with a long low point at the north end. It is about 4 miles in diameter, and is covered with hills, excepting a plain, averaging a mile wide, on its north and east sides. The hills are of even height, about 300 feet, with a very serrated or jagged outline, and marked colours, red, purple, &c.; in the midst, a few white peaks, looking like snow-covered hills, rise high above the general mass; the highest, which has a long slope to the eastward, and from the eastward or westward makes in a very sharp peak, is 690 feet high, and visible 26 miles; it stands near the centre of the island,  $2\frac{1}{2}$  miles S.S.E. from the fort. The hills, with the remarkable exception of the white peaks, are all of salt, with a thin incrustation of various coloured earth on them. There is also, on the south and south-east sides, a range near the sea, not of salt. A few detached rocky hillocks stand on the east coast. The old city stood on the plain, on the north side of the island.

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It was called by early voyagers the high land of Gombroon.



The only remains now visible from seaward are the Portuguese fort, highest part 45 feet, on the extreme north point; the S.E. bastion, observation spot, is in lat.  $27^{\circ} 5' 51''$  N. and long.  $56^{\circ} 27' 20''$  E.; and a minaret, 70 feet in height, standing by itself in the plain, 400 yards south of the fort.\*

The present village of Hormúz is built almost entirely of mat huts, and contains approximately 400 men, who are employed in fishing and collecting salt; they have about 20 fishing boats, and a few larger craft, which trade to Maskat and Bander Abbás, chiefly with salt, which is exported in large quantities, and salt fish. There is a guard of a dozen men in the fort, which is still considered a military post. In the hot months, most of the inhabitants leave the island for Míнау, where they are employed in the date harvest.

Little is to be got here, there is water only in reservoirs, generally in very small quantity, that coming down from the hills, in rain even, being saturated brine. On the east side of the fort the coast forms a small bay, which, with the north point, is clear of reef: on the east

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\* The Portuguese fort was built about A.D. 1515, the island having been taken by the Portuguese under Alfonso de Albuquerque in 1514 or 1515; it was surrendered by them to the English and Persians in 1622, after a siege of two months and a half. It is quadrangular, and has a moat, now nearly filled up, across the isthmus connecting it with the town, with the remains of a bridge across it, the other three faces being washed by the sea at high water. It is the most perfect specimen existing of the old Portuguese forts, but is much dilapidated. It is a bastioned fort with orillons, and casemates under the ramparts; there are numbers of rusty old iron guns lying about on the ramparts, and the western side is much undermined by the action of the sea. There is a fine vaulted reservoir for water in the fort.

There are only faint traces of the mosque, to which the minaret belonged. This has a winding staircase inside, but much broken; the whole structure is worn away at the base, and appears ready to fall. Its exterior has once been inlaid with glazed bricks, of different colours, so as to form a pattern; these have nearly all fallen out, leaving their beds in the mortar, which still show where they once were. Of the town, which covered a space of about a square mile, little remains, except the foundations of the houses—those built close down to the sea are the most visible,—and an outwork or fort on the town wall, about a third of a mile to S.W. of the fort. There are also several hundred ruined reservoirs for water, most of which are full of earth, and are used to grow vegetables in. Three-quarters of a mile southward of the fort are many Mussulman tombs, some with small domed buildings over them, which have once had some pretensions to architecture.

On a little hill near the shore,  $1\frac{1}{4}$  miles to the south-eastward of the fort, is the ruin of a small chapel, called Sta. Lucia on an old map in Astley's collection of voyages; and on the summit of the nearest range of salt hills, nearly  $1\frac{1}{4}$  miles south of the fort, the remains of another chapel, approached by a steep winding road, called on the same map N. S. de la Pena. It, as well as the road, is partly swept away by the dissolution of the salt foundation. Four miles from the fort, and at the south-east angle of the island, are considerable ruins called Túrun-bagh, with remains of a garden and irrigating channels, also of a well, and terrace walls to support the soil; this is on the only part of the hills not salt. On the same old map it is called King's Palace. Turumbake, and represented with many trees. There is an extensive burial ground there, and ruins on most of the hills round it.

and south-east sides the shore reef extends from 2 to 6 cables off shore. The south and south-west sides are cliffs, and shoal water appears to extend  $1\frac{1}{2}$  to 2 miles off shore south-westward of the island.

**Anchorage.**—The anchorage is with the fort about West, half a mile off, in 4 to 5 fathoms, mud, or nearer for small vessels. It is quite sheltered from every wind except the nashí, for which the native boats shift round to the westward of the fort.

**Directions.**—The strait between the fort and mud flat extending off the main, is one mile wide at the narrowest part, with 10 fathoms; the mud flat on the north side of the strait is deep-to, the channel being at this part close to the island. At  $2\frac{1}{2}$  miles to north-westward of the fort there are only  $3\frac{1}{2}$  to 4 fathoms in the strait, over an extensive flat. Nearly all round the island 5 to 7 fathoms are close to the edge of the reef, and 12 fathoms 2 to 3 miles off on the south and east side, so that the soundings are a sufficient guide approaching it, except the spit on the south-west side, which has deep water quite close to, and extends upwards of a mile off. There is also a rocky ledge nearly half a mile off the north-east side.

**BANDER ABBAS\*** is a large town at the bottom of a bay in the northernmost part of this end of the gulf. The town stands on the beach, and has a front of half to three-quarters of a mile; the ruins of the old European factories are conspicuous; one of these, the Dutch, is in good repair, and the residence of the Governor. It is a place of great trade, and has a very fluctuating population, as, during the hot season, which is here almost insupportable, most of the population migrate to Míнау, &c. During the cold season there may be 10,000 to 12,000 inhabitants. The town is defended by a wall, with round towers at intervals, all more or less in ruins; and there is no cultivation or date plantation near it. The Governor's fort, S.W. bastion, is in lat.  $27^{\circ} 10' 29''$  N. and long.  $56^{\circ} 16' 47''$  E. (observation point.)

The Governor of this place has authority over the country between Shimíl and Khamír, and over the Shaikh of Kishm. This town is the port of Karmán: many baghalas belong to it, or call here on their

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\* It is generally called only Bander by the Arabs. The English factory, of which only the foundations remain, is some distance to the westward of the town; of another, said to be the French factory, the walls are still standing. The Dutch factory is a large building fortified with a wall and towers. At a quarter of a mile north of the town, are about a dozen tombs of European residents, some large and pretentious erections, but no inscriptions; the largest is a pyramid about 30 feet high. It is the site of the town of Gombroon, a name now entirely obsolete,

See plan on Admiralty chart, No. 2,837a.

way from Bushire to Bombay. The Persian gulf mail steamers call here weekly both on the up and down passage; and there is a British post office. Its trade has increased considerably in the last 20 years. The principal articles of trade are—sulphur from Khamír; salt from Hormúz, and dates from Mínau; wool, carpets, assafoetida, cotton, ghee, dried fruits, silk, linseed, gums, dyes, madder root, shark fins from the adjacent islands; wheat is sent to England, tobacco and opium are also exported, the latter to China, viâ Bombay. Imports: piece goods, rice and other grain, metals, coffee, sugar, spices, tea, timber, cotton twist, jute, indigo, liquors, with hardware from Bombay, sent into the interior. Silk, tobacco, timber, and woollen goods chiefly re-exported.\* Some supplies, as cattle, vegetables, rice, &c., and water, are procurable. The bazaar is rather a good one. The landing at low water is bad, as the beach dries off a long way. No coal is now kept here. A wharf has been lately built in front of the Custom house.

**The COAST** from Bander Abbás runs S.W. by W. 5 miles to a low sandy point, forming the east entrance of Clarence strait, the strait between Kishm island (Jezírat at Tawíla) and the main; the natives appear to have no general name for it, except Khorriya, or the “strait.” At 2 miles south-westward of Bander Abbás is a small village, with a fort and date grove, called Súru, and half-way between these places is a small domed tomb on the shore. Three or 4 miles to the eastward of Bander Abbás there is the small village of Náband, with a tower and a few trees, one of which is a large banyan tree. It is about a quarter of a mile from the shore.

**Anchorage.**—The anchorage is in 3 fathoms, mud, one mile off the town; and for a large ship, in 4 or 5 fathoms, about 2 miles off, with the centre of the town bearing N.N.W. The holding-ground is good, and the roadstead well sheltered, except from south-eastward.

**DIRECTIONS** for approaching Bander Abbás. If working through between Hormúz and the main, there is no danger on the island side, nor less than 3 fathoms on the tongue extending nearly 3 miles north-west of the fort; but the edge of the mud flat lying off the mainland has 8 fathoms close-to, and it runs off from the low shore, to within a mile of the fort on the north end of the island. If passing between Larak and Hormúz, there is no reef off Larak beyond a cable, but the extent of the shoal water off the south-west side of Hormúz has not been properly examined, and requires caution in passing it, being steep-to. If working in, a vessel should not stand

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\* The caravans take 20 days from this place to Karmán, and 13 days to Lar.

over nearer to Kishm town than  $1\frac{1}{2}$  miles, or should not deepen her water approaching it to more than 27 fathoms, the deepest water being close to the edge of the 3-fathoms bank off that place; the water also deepens on approaching Larak island. In passing between Kishm and Larak at night from the south-west, it is advisable to keep Larak close to until the high peak bears S.E. by S., and so avoid the strong irregular currents off Kishm point, near the shoal patches east of Kishm.

**KISHM or JEZÍRAT at TAWÍLAH.\***—This island, the largest in the gulf, is 60 miles in length, E.N.E. and W.S.W.; its greatest breadth being 19 miles, but averaging only about 7. There are many towns and villages on it, and it is nearly covered with light-coloured table-topped hills, often very remarkable, having precipitous broken-down sides. It lies parallel to the coast, and is separated from it by Clarence strait, which varies in width from one to 7 miles.

**South Coast.**—Off the south side lie the large islands Larak and Hanjám. The south coast is free of danger as far as Básidu flat.

**LÁRAK ISLAND** is  $5\frac{1}{2}$  miles long N.E. and S.W., by  $3\frac{1}{2}$  broad, and of oval shape, with a little low sandy point on the north side, which is in lat.  $26^{\circ} 53' 8''$  N. and long.  $56^{\circ} 21' 27''$  E. It is barren, and covered with rugged hills; the highest peak, about a mile from the north shore, is 510 feet high, of a square form, and visible 24 miles; another, nearly as high, one mile S.W. of this, forms a fine cone, best seen when bearing South to East. The higher hills are partly volcanic, and some, as at Hormúz, consist of salt. On the north side, nearly 2 miles from the low point, is an unfinished fort built by the Dutch, upwards of 200 years ago, and a little village, the only one on the island, containing about 80 men of the ash Shihyyín tribe, who are fishermen, and exceedingly poor. In the interior of the island are a few wandering herdsmen, about 40 in number, who are supposed to have come from Khasab. The villagers take their fish, and the ghee, &c., produced by the herdsmen, to Kishm for barter. They have but little water in the reservoirs. The island is covered with stunted vegetation, and there are two small date trees near the village.†

Larak is deep to all round, 15 fathoms being generally under half a mile off; on the south side, 40 fathoms are close outside that distance. To the S.W. of the island there is a 17-fathoms bank or ridge extending many miles to the south-westward, probably opposite

\* *i.e.* "The Long island." By the Persians it is styled in the same sense, Jezírat Diráz.

† See plan on Admiralty chart, No. 2,837a.

to Shúza, with 25 to 30 fathoms between it and the shore : it has not been sounded ; it is said the least water on it is 12 fathoms.

**Caution.**—Off the west side the shore reef extends 4 cables off shore.

**Anchorage.**—The anchorage on the north side, between the low point and the village, is in 13 fathoms, about half a mile off shore, and a quarter from the edge of the sands, which dry off some distance at low water ; off the village the bottom is rocky, and the shore reef extends about a cable off shore. This anchorage is sheltered only from the shamál, and is an undesirable one for any vessel not obliged to visit the island.

**KISHM, properly KASM,** is large and well built for an Arab town; it has several high wind towers (called Bádgir), which are peculiar to the Persian side of the gulf; it is situated on the coast, just to northward of the easternmost point of Jezírat at Tawíla, and may contain 6,000 inhabitants. Near the south end is an old Portuguese fort,\* which is a conspicuous object from seaward ; the N.E. angle is in lat.  $26^{\circ} 57' 27''$  N. and long.  $56^{\circ} 16' 50''$  E. ; the highest building in the town is 50 to 60 feet high, and may be seen about 8 miles. There is a small date grove on either side of the town, and a short distance to the southward of it are several domed water reservoirs. Many baghalas belonging to this port trade to Bombay, &c., and the Shaikh owns one or two grab† ships. The chief of Kishm exercises authority over the other towns and villages on the island. Much common pottery is made here, there being good pottery clay on the island. The land behind the town, and to the southward of it, rises in a gradual slope from the sea, ending in precipitous broken ground to the north and westward. The highest part is a table hill 560 feet high, 3 miles West of the town.

**Supplies.**—Water is procurable here easily, from wells near the beach ; also cattle, vegetables, &c.

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\* This fort, built in 1621, was besieged by the combined English and Persian forces, and surrendered to the English on Feb. 1, 1622. One of the very few English killed on the occasion was William Baffin, who in 1616 sailed round Baffin sea. It is a quadrilateral bastioned fort, about 100 yards square and surrounded by a moat, now crossed by a rude bridge. There are many rusty old iron guns on the ramparts. About a mile to N.W. of the town, on a little precipitous hill near the shore, are the remains of the English entrenched camp, 1820, which is on the site of some older fortification, possibly Portuguese. The mortality in this encampment during the hot weather was excessive.

† Grab.—Vessels without a bowsprit, the jib-boom projecting from a long cut-water ; in shape the hull somewhat resembles the bagha'la, in other respects they are rigged as square-rigged vessels. They were formerly common.

**Anchorage.**—East of the town are several banks of rock and sand, with  $2\frac{1}{2}$  and 3 fathoms on them, the outer of which is  $1\frac{1}{2}$  miles off shore, and is quite steep-to on the outside, having 30 fathoms within a mile of it, and 5 to 7 fathoms between it and the shore. There is also a  $2\frac{1}{2}$ -fathoms rocky patch, a quarter of a mile east of the town, with 7 fathoms close to it. At one mile south of the town shoal water extends half a mile off shore.

The anchorage is with the Portuguese fort South to S.  $\frac{1}{2}$  W., about three-quarters of a mile off, in 4 or 5 fathoms, in approaching which you will have to pass over  $3\frac{1}{2}$  fathoms. The water shoals very quickly towards the flat off the town.

The anchorage is well sheltered in a shamál, and there is no heavy sea with a nashi, but with the tide a vessel lies broadside on to the wind, and will ride uneasily.\*

**TIDES** run strong off the town along shore and over the shoal banks with ripples; high water at full and change at 10h. 45m.; springs rise about 12 feet. From the Quoins it sets to N.W., and towards Larak and Kishm islands.

**DIRECTIONS.**—A vessel may pass on either side of Larak, which is deep-to, and may be approached with safety within a mile; she should not stand in for Kishm anchorage till the town bears S.W. to S.S.W., keeping about 2 miles off shore until on that bearing, to avoid the foul ground east of the town. By day the discoloration indicates the approach to its edge. There are 30 to 40 fathoms between Larak and Kishm island. The south coast of Kishm island below the town may be approached to a mile; the soundings will be a guide approaching the edge of the shore reef, but the water shoals very quickly towards it.

**The COAST** above Kishm runs N.W. by W.  $\frac{1}{2}$  W., 4 miles, to a point on which stands a long low table hill, about 100 feet high; there is no reef off it, but the sandy beach dries off about a quarter of a mile. At this point, which forms the south-entrance point of Clarence strait, the coast of the island turns to W. by S.

Below Kishm the coast bends round to south and westward, having an average direction of S.W. for 25 miles to Ras Khargú, the entrance point of Hanjám sound. At 3 miles West of Kishm the table-land ends; and there is a low plain extending quite across the island and several miles in breadth, to the westward of which the table hills recommence, and continue without interruption the whole distance,

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\* The roadstead between this place and Bander Abbás was the rendezvous for the fleet (Indian Navy) and transports proceeding to invade Persia in the expedition of 1856.

almost close to the sea, decreasing in height towards Ras Khargú, and precipitous on the sea face. The only hill at all recognizable is a square lump, somewhat higher than the rest, opposite the town of Shúza, and about 500 feet high. The mountains of the mainland are seen over the island ; they are described with the shores of Clarence strait.

**Soundings.**—The soundings are steep, and there is no danger on the coast : 20 to 25 fathoms being one to 2 miles off shore. There is a bank with 18 fathoms about 8 miles to south-eastward of Shúza. The shore is exposed to the shamál, which blows at W.S.W. to S.W. by W. Just below Kishm, opposite the gap in the hills, the coast forms a rather deep bay, about 8 miles across, in which the shore is low and sandy, to the south-westward of which it is rocky in patches, with little sandy beaches between, as far as Ras Khargú. A shoal patch opposite Masan with 2 fathoms is reported, but it must be within a mile of the land.

**Shúza** is a large village with a date grove, on the coast, 10 miles N.E. of Ras Khargú ; it stands under the eastern part of the table hill before mentioned, by which its position may be known from the seaward. Half a mile East of the town is a ruined tomb or mosque with a dome on the little cliffs.

At 2 miles north-east of this mosque is a flat rocky islet with perpendicular sides, lying a quarter of a mile off a small rocky point ; and behind the islet is a small bay with  $1\frac{1}{2}$  fathoms, in which native boats find shelter in a shamál ; on the east side of the bay are two or three similar smaller rocky islets, nearly joined to a point of the main at low water, with another small bay to the eastward of them. Masan, a village with about 50 men, stands on the coast 6 miles S.W. of Shúza. There are date trees along shore here, and an old mosque with ruins inland.

**RAS KHARGÚ** is low and rocky, the hills sloping down in very broken ground to it. South-eastward from this point the bottom is rocky and uneven, with 3 fathoms half a mile off shore ; and one mile south east of it there is a 3-fathoms patch, hard bottom. From this point to Shúza the 3-fathoms line is about half a mile off shore, and inside it there is foul ground ; outside of that depth the bottom is mud. At Ras Khargú the coast turns to northward, forming a deep bay between it and Ras Salak, which has been called Diristán bay, from the village of that name, situated near the bottom. South-westward of it there is a channel nearly a mile in width,

between it and Jezírat Hanjám, which is the anchorage known as Hanjám sound.

**JEZÍRAT HANJÁM\*** is a barren hilly island, nearly 5 miles long in a N.N.E. and S.S.W. direction, by  $2\frac{1}{2}$  broad. Seen from the east or west, it has a valley or gap in the hills near the north end, which, at a short distance, causes the island to make in two parts. On the south side of this valley is a remarkable table hill, 350 feet high, which is the highest on the island, and visible 20 miles. From the south this hill is not seen, and there is nothing to characterise the island, but the dark colour of most of the hills, compared with those on Kishm, and their rounded or peaked shape; they decrease in height towards the south end of the island, which is comparatively low. The island is covered with coarse grass and brushwood. There is a large village near the southern point inhabited by Arabs from the opposite coast, who have a number of pearl boats, and keep some goats on the island. The white mosque on north end is the observation spot; it is in lat.  $26^{\circ} 40' 49''$  N. and long.  $55^{\circ} 53' 38''$  E.

The shores of the island consist of rocky points with little cliffs, and sandy beaches between; excepting at the north point, which is low sand, and has 8 fathoms a cable off; the shore reef extends from half to quarter of a mile off shore, and is deep-to. On the south side 30 fathoms are one mile off. The depths in the sound are from 8 to 16 fathoms.

**Supplies.**—After rain, some water is obtainable here in one or two of the ruined reservoirs† at the north end; and there is a well of fairly good water about a quarter of a mile from the south-east point of the island, near the village. Oysters are to be got on the rocks at low water. A few provisions may be obtainable.

Vessels drawing about 10 feet may beach here. Long vessels would have to beach broadside on, on account of the steepness of the sandy beach. The west side of the spit running out from the north point appears to be the best spot.

**Telegraph.**—A telegraph station was established here in 1869, but has lately been removed.

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\* See plan on Admiralty chart, No. 2,837a.

† There are two small ruined mosques or tombs near the north point, the eastern one white, the other red; also 20 or 30 reservoirs for water, all arched over, but now ruinous or choked up. There are also mounds of rubbish indicating the remains of a large town, probably of one of those Muhammadan towns which flourished five centuries or more ago. It is said trade was carried on with the interior viâ Laft and Khamír. Dr. Gemelli Carreri put into Hanjám for water in Nov. 1694; he found the cisterns dry, and adds, "it was not inhabited, because it was burned down by a Portuguese general." In the hills about a mile to the south-eastward of the table hill, are deep caves in the hill side, the result of the subsidence of the upper strata on the dissolution of the underlying salt formation.



**Anchorage.**—There is anchorage with the low north point West, a quarter of a mile off shore, in 9 fathoms, sand; this is sheltered from all the prevailing winds, but the bottom is hard, and a vessel is liable to drag her anchor, especially as the tides are strong with an eddy close in on the ebb. The anchorage to westward of the north low point, with the red tomb South, is generally preferable, the bottom being more regular. This anchorage is partly sheltered from the shamál, which blows from the S.W., or a vessel may shift from one side of the spit to the other, if necessary.

**DIRECTIONS.**—In entering or leaving the anchorage by the eastern channel, do not approach the south side of Ras Khargú nearer than a mile; on the west side of that point there is no danger, the soundings shoal regularly but quickly; on the island side spits extend nearly half a mile off the east and north-east points, which are steep-to, having 16 fathoms quite close to them.

In working out round the north end of the island, avoid a detached 3-fathoms bank one mile N.E. of the low north point, and half a mile from the main. The north-west side of the island must not be approached nearer than three-quarters of a mile on account of a spit, which has 8 fathoms quite close-to, the water rather deepening on approaching it. The soundings are a guide standing over into Diristán bay, in which the water shoals regularly. Ras Salak is safe to approach to half a mile. The soundings North and N.W. of the island are somewhat irregular, 6 to 16, and even 20 fathoms; and between the island and Ras Salak there are 6 and 7 fathoms quite across, from the island to the main. In a shamál it is preferable to enter the anchorage from the eastward.

**Tides.**—The tides run strong in the Sound and round the N.E. point with eddies, 3 knots at springs.

**DIRISTÁN**, a village, with a few date trees,  $1\frac{1}{2}$  miles from the coast, at the bottom of the bay to westward of Ras Khargú, contains about 100 men, and they have a few boats. There is a remarkable long quoin-shaped hill, with the bluff to the westward; between which and the hills to the northward of Ras Khargú is a large swampy plain extending quite across the island.

**RAS SALAK**, the west point of Diristán bay, 7 miles West of the north point of Hanjám, is sandy, with rocky beach; the shores of the bay are low and sandy from this point, nearly as far as Ras Khargú. The hills are here about 2 miles from the shore. The general direction of the coast to Ras Dastakán, the south-west point of Kishm island, is W. by S.  $\frac{3}{4}$  S. To the westward of Ras Salak the shore forms a bay, in which,  $2\frac{1}{2}$  miles W. by N. from it, is the fishing village of the same name, with about 30 men. There are a

few date trees, and some wells. A British force was stationed here for a short time in 1821.

**Ras Tarkún** is a small rocky point 8 miles W. by S.  $\frac{3}{4}$  S. from Ras Salak; and  $7\frac{1}{4}$  miles farther to the westward is a small point where the hills come close down to the sea. About half way between these last two points, and 2 miles from the shore, stands the highest hill on the island, called Kishkuh, which is 1,300 feet high, and has a small table top; it is easily recognisable from seaward, and is visible about 40 miles. About half a mile East of this point a range of dark hills runs across the island, the only hills on it not of light colour, and in a great measure composed of salt. At the foot, called Namakdán (*i.e.* the place of salt), are some large salt caves,\* and the brine which drips from them runs out into the little plain between them and the sea, and evaporating there, leaves a deposit of salt, which is carried away in boats to Linja, and to places on the Arab coast.

**Soundings.**—The soundings from Hanjám as far as Namakdán are regular, 20 fathoms being 6 to 7 miles off shore; but off it, commences the great bank known as Básidu flat, which is a shoal of sand and clay with  $2\frac{1}{2}$  to 3 fathoms on it, extending 7 to 9 miles off the island, and from abreast of this point to 5 miles west of Ras Dastakán, having a channel between it and the island with 4 to 6 fathoms.

**RAS DASTAKÁN** is the low rocky south-west point of Kishm island; here the coast changes its direction to North, towards Básidu point, which bears N.  $\frac{1}{2}$  W. 7 miles from this. There are two shallow bays, eastward of the point. The passage between the Flat (*see* page 228) and the island, which commences off Namakdán point, is  $1\frac{1}{2}$  to 2 miles in width, at the entrance, but narrows to half a mile about mid-way between Namakdán and Ras Dastakán, with soundings of 4 to 5 fathoms; it is close to the shore, and may be used by steamers, or with a fair wind. *See* also directions for Básidu, page 231.

From Namakdán point there are low hills close to the shore for 4 or 5 miles, as far as the little hamlet of Káwuni, which stands

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\* These salt caves are of great extent, and present a beautiful appearance, from the incrustation of pure white salt, and the great stalactitic masses hanging from the roof some of which are 6 or 8 feet in length, and proportionately thick. The principal salt caves about a mile from the beach, are about 2 miles farther to Eastward; they are of immense size and very lofty, and a bridle road has been made for transport of salt to the beach. Their position can be generally made out by heaps of salt stacked on the shore.

about a mile from the sea, with a few date trees near it ; and thence to Ras Dastakán there is a plain 2 miles wide, between the hills and the sea, in which, about  $1\frac{1}{2}$  miles N.E. of the point, stands the little village of Dastakán.

**The Hummocks** are three remarkable hills to the north-eastward of Ras Dastakán, useful as land-marks when entering Básidu road. The western hummock, 2 miles N.  $\frac{1}{2}$  E. from the point, is table-topped, and the lowest of the three. The centre, which bears N.E. by E. two-thirds of a mile from the western, has a rounded top. The eastern and highest is 585 feet high, and bears N.E. by E.  $\frac{1}{2}$  E.,  $1\frac{1}{2}$  miles from the western ; it is table-topped, has a bush on the summit, and may be seen 25 miles. All three are quite precipitous on the south face, and the eastern is nearly joined to a long range of table-land, a little lower than the hummock, which extends 4 miles east-north-eastward, with a precipitous face southward, and ends in a bluff. At 2 miles E. by N. from this bluff is a table-hill or hummock 550 feet high, standing in the plain north of Káwuni village, and to the eastward of this are ranges of lower hills extending as far as the salt hills.

**CLARENCE STRAIT** is the name given to the passage between Kishm island and the main, which is navigable for vessels, but very intricate ; the survey of it is incomplete, and it would not be safe to attempt the passage without a pilot, especially as the tides run strong. (*See page 225.*)

**Mountains** on the mainland.—The great chain of mountains of which Jebel Gínao forms the eastern part, trends to West and W. by N. into the interior. At 18 miles W.S.W. from Gínao is a remarkable mountain, 5,120 feet high, with two great steps or notches on its western side ; and west of Gínao, 55 miles, is a high peak on the same range, visible over the other mountains far out at sea, and even off Ras al Khaima. This peak is 9,200 feet high, and has snow on it in winter ; it forms in three little peaks from the southward. To the west of Bander Abbás, between this range and the sea, is a range of low mountains about 1,000 feet high, running East and West, and ending about 20 miles from that place.

Another range of mountains commences near Khamír, and like the last, also runs westward into the country. The easternmost peak on this range, called on the chart Khamír peak, bears N.E. by E. 8 miles from Khamír town ; the range begins about 5 miles to the eastward of it, there being a great valley between it and that last described. Khamír peak has a small pointed peak on the highest

part, and is 3,700 feet high ; 13 miles west of it, on the same range, is another peak, much higher, but not very conspicuous in shape. From it a great spur of the chain runs south-eastward ; at the foot of which, 4 miles West of the town of Khamír, are the sulphur-hills.

A third range commences N.N.E.  $\frac{1}{2}$  E. 10 miles from Básidu point, and continues in a westerly direction, apparently uninterruptedly, for a great distance. The summit of the range opposite Básidu is 2,940 feet high, and of rounded or convex outline. There is a great valley between this and the Khamír range, the coast at the mouth of it being low and swampy, probably the delta of a small river.

**Shores of Clarence strait.**—From the table hill point N.W. of Kishm town, already described (*see* page 214), the south shore of the strait runs W.S.W. for 19 miles, the coast of the main being nearly parallel with it. Close round this point is a small backwater running into the low land north of Kishm great table hill, in which native boats are hauled up ; there are two little islets, called Dukuhak, on the west side of the entrance to this creek, which is called Khor Tawala. Two miles W. by S. of this is a peaked precipitous hill near the coast, of light colour, apparently of clay, and about 300 feet high, with a little low point off it. At  $6\frac{1}{2}$  miles W. by S. from the table-hill point is Quoin hill, of a remarkable quoin shape, with a small tree on the summit ; the bluff is to the southward, and it is 300 to 400 feet high. Between this and the peaked hill the shore forms a small bay, called Bander Salsúl, where boats anchor in a nashi.

**Dargúwan** is a little village  $1\frac{1}{2}$  miles S.W. of Quoin hill, inhabited by about 50 men, chiefly fishermen. There are some date trees here. From Quoin hill a shoal with one to 2 fathoms on it, and steep-to, extends eastward for upwards of a mile off shore, as far as Bander Tawala. The navigable channel of the strait is outside this bank, where there are 10 to 12 fathoms, and is contracted to 3 miles wide opposite Dargúwan by a shoal lying in the middle of the strait, which commences north of Quoin hill. Eight fathoms are close to the edge of this shoal, which extends  $5\frac{1}{2}$  miles to the south-westward, or past the village of Kuwai, and is dry in some parts at low water ; the bottom is said to be hard sand. The channel northward of this bank is not navigable, there being great overfalls.

The shore of the mainland forms a low point at about 6 miles North of Dargúwan. A short distance inland of this is a range of hills, extending to within a few miles of Bander Abbás ; they end about 6 miles west of this point, and thence the coast is low and swampy, with mangrove jungle, as far as the mountains behind Khamír ;

it is only approximately traced, and cannot be approached by ships. The average direction is W.S.W. as far as the town of Khamír.

**Kuwai** is a very small village, with a date grove, about 3 miles west of Dargúwan; there is a large ruined mosque here close to the beach, it having been a considerable place before the pirate times.

**Zainubi** is a village with about 200 men, 3 miles S.W. of Kuwai; it lies in a thick date grove a mile from the shore.

**Paipusht** is a village with about 100 men, chiefly boat-builders, who work at Kishm. It is built up the slope of a hill half a mile from the shore, and shows well from the strait.

The coast of the island is clear of danger between Dargúwan and Zainubi; the clear channel is contracted to one mile in width opposite the latter place, by a second middle-ground bank, which runs westward from this for 7 miles, as far as Ala Mulk: this bank also is steep-to, having 7 to 9 fathoms close-to; it is sandy, and generally shows only by the tide mark, the water being here discoloured quite across the strait. The passage on the northern side of this middle-ground bank, though 3 to 4 miles wide, is not navigable.

From 2 miles westward of Paipusht the shore of the island turns west-north-westward for 8 miles to Laft point, which is the north-west angle of a broad projecting point of the island; at  $3\frac{1}{2}$  miles eastward of this is a small fort on the shore with a few trees, called Ala Mulk. At nearly a mile S.W. of the fort is a quoin-shaped hill, with two tombs, one with a dome, on its southern and highest bluff, elevated 200 to 300 feet.\* Half-way between Ala Mulk and Laft point and on the northernmost part of the projecting point, which is low and rocky, stand two ruinous mosques, some reservoirs, and a date plantation, called Laft Kedím (or old Laft).

The shore from Paipusht till past Ala Mulk is skirted by a rocky reef, with deep water inside in places, and extending half to one mile off shore; it is quite steep-to, especially off Ala Mulk, where the clear channel is only three-quarters of a mile wide, between the shore reef and the end of the middle-ground shoal before mentioned. The depths in the channel are 14 fathoms, and 19 in the narrow part opposite Pul, the bottom being rocky in the deep part.

Opposite Laft Kedím the shore of the mainland is only  $1\frac{1}{4}$  miles off; it is low, and on it, at the narrowest part, are some ruined water-tanks: this point is called Pul (the bridge). From this place

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\* This hill is covered with ruins, and there are many reservoirs on it: at its low north end, where alone it is accessible, the remains of a wall are to be seen built along the edge.

the shore of the mainland is swampy for many miles to the eastward, and to the westward the coast runs W. by S. for 10 or 12 miles, or till past Khamír.

**KHAMÍR** is a fort and town on the mainland  $7\frac{1}{2}$  miles W.  $\frac{1}{2}$  N. of Laft point. It has a large fort, with a high square tower in the middle: the town, which contains about 200 men, is without the walls, and has a date grove to the eastward of it; the foot of the range of mountains behind this place is about a mile distant. The town lies half a mile from the shore, or port, where there is a small building for storing the sulphur exported from this place. The port is approached by a small creek, admitting boats of 20 to 30 tons only, which take the sulphur hence to Bander Abbás. Millstones also are exported from this place. The sulphur mines are in small hills near the foot of the mountains, 3 to 4 miles west of the place, and were very productive; they are worked very rudely, and are said to be nearly exhausted, as far as the present means of working will admit. They have been worked for a very long time, and the export is now small.

The coast line runs to West and S.W. from this place to the mountains opposite Básidu; it has not been traced, and is fronted by extensive mangrove swamps, intersected by numerous creeks. There are two rather remarkable pyramidal hills in the plain, 2 and 3 miles W.S.W. of Khamír town, they are about 150 feet high, and a short distance only from the edge of the swamp.

From Laft point the coast of Kishm island turns S.E. by S. for 6 miles, and then resumes an average west-south-west direction to Básidu point; the whole width of the strait is much increased to the westward of this point, but blocked up with mud and sand-banks and mangrove swamps. From Laft point there are two channels used by ships, as far as Gurán village, where they unite again.

**Laft** is a town with about 200 men, 3 miles S.E. of Laft point. It is built at the foot of a hill sloping up from the beach, 200 feet high, and ending in cliffs landward, with several towers and a wall built up the north side; the hill besides has been scarped where accessible. The small square fort behind the town remains in the ruinous condition it was left by the British expedition of 1809. This is a place of some trade; much firewood, which is cut in the swamps, is exported. Many baghalas, from Linja, &c., are sent here for repair, and some are built here.

A small creek runs up to the town, close along the shore, in which the native vessels lie. Its entrance is at the south end of a low islet,

called Hindarábi, which has a little ruin on it, and lies one mile South of Laft point, separated from the main island by a very narrow channel. Laft creek is narrow, and has mud-banks with mangrove bushes, between it and Khor Gurán.

From Laft the edge of the hills runs S.S.E. across the island, leaving a large plain or valley quite across to Diristán bay, the hills on the west side of which extend uninterruptedly to the west end of the island. The great swamp south-eastward of Laft is only approximately delineated.

At one mile E.N.E. of Laft town is a remarkable hill, 500 to 600 feet high, visible nearly 30 miles; it is said to have ruins of reservoirs, &c., on top.

**Supplies.**—Fresh water only in reservoirs, and no vegetables procurable; perhaps a few cattle and some poultry. Good fish are caught here, as also at other places in the strait, and much is salted and exported.

**Khor Gurán** is the eastern of the two navigable channels mentioned above, it is narrow, in some parts under a quarter of a mile in width, but generally preferred by the pilots, as the water is deep (5 to 15 fathoms), and the banks are of mud, and well defined by the mangroves on them. Its course is tortuous, being south from Laft point for 9 miles, passing about one mile westward of that town; thence N.W. for  $2\frac{1}{2}$  miles, and then turning sharply S.W. and S.S.W. 9 miles more, to the village of Gurán; it then trends to W.S.W. for 2 miles, when it re-unites with the western or main channel. This last reach is the most difficult part of the passage; it is very narrow, with 12 to 15 fathoms, and the banks are covered at high water, and have no mangroves on them.

**Gurán** is a small village, resorted to, like Laft, by many boats, for firewood, which is sent to all parts of the gulf; large quantities are kept stacked on the shore ready for shipment.

**Khor Masága** is the name given to the western branch of the strait, and it appears to apply also to the part between Laft point and Kishm. This channel is seldom used by the pilots, although broader than Khor Gurán, being three-quarters to  $1\frac{1}{4}$  miles in width, with depths of 7 to 14 fathoms, the banks on either side being under water, are often steep-to, and not showing in the muddy water of the strait. Its direction is West for 4 miles from Laft point, and then 14 miles S.S.W. to the junction with Khor Gurán. From the junction of the two channels, as far as Básidu, the strait is called by the natives Khor Jafuri; its direction is W.S.W. and W.  $\frac{1}{2}$  S. for

16 miles to Básidu point, being nearly parallel to the coast of the island, and for 10 miles lies within half a mile of it. The navigable channel is one to  $1\frac{1}{2}$  miles wide, with 8 to 12 fathoms in it, and sand-banks on its north side, which render the remaining part of the width of the strait unfit for navigation.

Between Gurán and Básidu are the following villages :—Cháhu, about 7 miles from Gurán, a small scattered village chiefly inhabited by fishermen, about half a mile from the coast, with a date grove to the N.W. of it ; this place is opposite Kishkúh hill, already described, and there is a white tomb near it, which is seen from the strait. Dúlu and Tersai, two small villages, with date trees, about 3 miles from the last ; the inhabitants are cultivators and fishermen. Kunársiya, a larger place, one mile from the last, and  $9\frac{1}{2}$  from Básidu point, lies about a mile from the shore, and has a date grove north of it. Neither of these last three are seen from the strait. Diraku has several water reservoirs, with some cultivation, and a date grove to the northward of it ; it stands a mile from the sea, on a little rising ground, and is 7 miles from Básidu ; between this and the last village the coast forms a low point. Lastly, Gúri, a large village 5 miles from Básidu, with an extensive date grove, and much cultivation between it and the strait ; most of the vegetables and fruit supplied at Básidu are brought from this place and Diraku ; these two villages are visible from the strait ; the inhabitants are cultivators. There is a pass here through the hills to the south coast. From this place the shore is low and barren as far as Kalat Haji Karitu, a ruined fort, on a small rocky mound close to the sea, 2 miles east of Básidu point. Half a mile to S.W. of this hillock is a large date plantation, with a few houses, called Nakhlistán, where are some wells of good water.\*

A mud flat commences 8 miles east of Básidu, extending from half to one mile off the island, as far as Básidu point, and all nearly dry at low water. At  $5\frac{1}{2}$  miles eastward of Básidu is the east end of a middle-ground shoal, which extends to within 2 miles of the point, and lies  $1\frac{1}{2}$  to 2 miles off shore, having  $1\frac{1}{2}$  to 3 fathoms on it : the channel for shipping is to the northward of this shoal, and about a mile in width, the passage between it and the island flat being very narrow.

On the north side of the navigable channel a sand-bank runs nearly East and West from opposite Gurán ; its distance off the

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\* See Admiralty plan of Básidu and its approaches, No. 35 ; scale,  $m = 0.6$  of an inch.



island increasing from  $1\frac{1}{4}$  miles at that place to  $2\frac{3}{4}$  miles opposite Básidu. It has from a quarter to 2 fathoms on it at low water.

The mainland north of Básidu is  $7\frac{1}{2}$  miles distant, the mangrove swamps ending about 5 miles to the eastward. The mountains here come close down to the strait; they are rugged, barren, and almost inaccessible, and run in an East and West direction, the eastern end of the near range bearing N.N.E.  $\frac{1}{2}$  E. from Básidu point. There is a picturesque gorge in the mountains, N.  $\frac{1}{2}$  W. from that point, in which is a spring of water strongly impregnated with sulphur; from this the coast turns to southward, leaving the hills, and forming a low point,  $4\frac{3}{4}$  miles N.N.W. of Básidu. There is a date grove on this point, and many ruined reservoirs, &c.; 2 miles to northward of it is a small hamlet and date grove, called Birka Sifla.

**DIRECTIONS.**—It would not be prudent to attempt the passage through Clarence strait without a pilot. There are professional pilots for the strait, who reside at Kishm, and would have to be sent for, if starting from Básidu; they must be trusted entirely with the navigation of the ship. The following remarks are offered, as the result of the authors' experience.

Working through the strait must be done by tide work, anchoring as soon as the stream turns against you.

Leaving Kishm, after passing the low table-hill point, the shore bank between Khor Tawala and the tree Quoin hill must be avoided, it extends more than a mile off shore; and if working, tack on its edge in 7 fathoms. After passing the Quoin hill, you may keep close along shore as far as Paipusht; if working between these places, tack on the middle-ground shoal opposite Dargúwan in 8 fathoms.

The first point after passing the large mosque at Kuwai is of low cliff, and north-westward of this begins the second middle-ground shoal; working between which, and the rocky bank on the island side requires great care. The channel is under a mile in width, and the pilots tack in 11 fathoms on either side; they say a quick-working vessel might tack in 10 fathoms on the south, and 8 on the north bank, which would be very close.

From Ala Mulk as far as Laft point the passage is clear of danger, but the bottom is rocky, and bad for anchorage;\* after passing that point it is generally mud.

After passing Laft point, Khor Gurán is the passage mostly used by the pilots; indeed there are few of them who will take vessels by the western passage, for which written directions cannot be

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\* The pilots avoid anchoring in this part, if possible.

given. In Khor Gurán, the banks are everywhere a guide, either in sailing or working ; in the first reach below Laft, the pilots tack in shoal water on the west, and deep water on the east side. In the narrow part, thence to Gurán, the vessel has to put about again as soon as she has gathered headway. The only difficulty appears to be at the entrance west of Gurán, where the banks of the khor are under water. After passing this, you may keep along the shore of the island, at about half a mile off, as far as Diraku village, when it is usual to cross over to the north bank, and run along it in 5 fathoms, till past the detached bank lying off the island between that place and Básidu, and then stand across for the anchorage.

**BÁSIDU** is a small village on the northwest point of Kishm island, belonging to the British. The point is of low cliff, 20 feet above high water, and level on top, with a few small buildings scattered about, and some date trees. There are three Government water reservoirs and a jetty, extending only to low water mark. The remainder of the village consists of a house built by the officers of the Indian Navy, now much dilapidated, a quarter of a mile south of the point, which has a flagstaff, where the union jack is hoisted when any ships are in the road, and is the first thing seen from seaward ; a small bazaar, in which is the house of the native agent and contractor, the best building in the place ; and a scattered village of donkey-owners, washermen, &c., who depend for their living on casual visits of vessels of war.\* There is a small chapel which is going to ruins, close to the jetty. The place has been nearly abandoned since the abolition of the local Indian naval squadron. The chapel near the jetty is in latitude  $26^{\circ} 39' 12''$  N. and longitude  $55^{\circ} 16' 1''$  E. (observation spot).

**Supplies.**—The merchant above mentioned supplies vessels with a few provisions and necessities. Good water is obtainable only in limited quantities ; when the three Government reservoirs are empty it has to be brought from Nakhlistán, and a vessel would save time by going to Linja, or some other port on the main, to fill up. **Coal.**—There is a small quantity here belonging to Government, but it is not intended to keep up the supply.

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\* Just east of the present village there are the ruins of a rather large town, extending more than half a mile along the shore ; also of an European factory, with several ruined reservoirs. The first establishment of the British here took place in 1821. After the withdrawal of the field force in 1823, it was made a small depôt for the naval force.

**TIDES.**—It is high water, at full and change, at 12 hours; springs rise 10 feet, neaps 2 to 4 feet. The tide stream, setting westward through the strait, begins here one to  $1\frac{1}{2}$  hours before high water, and the east-going stream, the same time before low water; this latter has always been called the flood. The set of the tides between the point and Flat is not sufficiently made out. On the Flat, clear of the island, the tide sets E.N.E. and W.S.W., and the stream runs 3 hours each way after the turn of tide, so that it appears to make at half tide. The tides run one to 2 knots, and in some parts of the channel even more.

**The ROAD.—Beacon shoal.**—At  $\frac{5}{8}$  of a mile W.  $\frac{1}{2}$  N. from the point is a beacon, consisting of a ship's mast with a cask on it, about 40 feet high, and visible 5 to 6 miles, on the north end of a long narrow shoal, which runs S.W.  $\frac{1}{2}$  S.  $3\frac{1}{2}$  miles, and is rocky near the beacon end, the rest being a sandy spit. It is dry at low water for 3 miles from the beacon, and thence deepens off gradually in a tail, bending round South and S.S.E. This shoal forms the shelter to the anchorage, and protects it against the shamál, which here blows at S.W. by W. There is a narrow deep channel between Beacon shoal and a mud-flat extending off the west side of the island, but not navigable. Beacon shoal is deep-to, having 8 to 10 fathoms, the deepest water in the channel, close to its edge.

**Anchorage.**—Parallel to Básidu point, and rather less than half a mile off it, is a deep gut, with 12 to 16 fathoms in it, which ships should avoid anchoring in. The best anchorage is on the belt between this and the point; the available breadth of anchorage ground being under a quarter of a mile, between the gut and the 3-fathoms line.

Anchor immediately after crossing the gut, in 7 to 5 fathoms at low water; and either opposite the jetty, or thence as far as the storehouse, and a quarter to one-third of a mile off shore. The bottom is clay, very good holding ground. It is advisable to moor, as the winds blow strong against the tides, and a vessel is apt to foul her anchor, or, at any rate, lies very uneasily. Open hawse should be to southward. Off the jetty a small rocky spit, nearly dry at low water, extends 270 yards off shore, with  $2\frac{1}{2}$  fathoms close to its outer edge. A flat of sand and rock, nearly dry at low water, begins off the hospital, where it extends one cable off shore, and, at one mile to eastward of Básidu point, is nearly half a mile in extent.

The shore between this point and Ras Dastakán, the south-west point of Kishm island, see page 218, is low, except opposite the

Hummocks, where some broken rocky hills come close down to the shore. A flat of mud and sand, already alluded to, lies off the coast for nearly 5 miles South of Básiḍu, extending in some parts 2 miles off shore. Dastakán point is clear of danger, and there is a passage a mile wide, close southward of it, leading E.N.E. along the south shore of the island; and W.N.W. over the tail of Beacon shoal, in  $3\frac{1}{2}$  fathoms, into the entrance channel of Básiḍu harbour.

**The Flat** (see also page 218) is a great bank, with 2 to 3 fathoms on it at low water, lying off the south-west end of the island, and separated from it by the channel just mentioned; it extends  $8\frac{1}{2}$  miles off the south, and 5 miles off the west side of the island. The soundings are a guide approaching its southern edge, if the lead is going quickly; by day, the discoloured water extending some distance outside the bank, is a good guide: 20 fathoms are 2 to 4 miles from the edge, which is steepest at the south-east corner. Off its west side the water deepens very gradually, there being soundings under 5 fathoms, quite across, till near Kung on the Persian coast.

**North bank** is a continuation of the middle-ground shoal of Clarence strait, which begins near Gurán; it is of hard sand, and takes a south-west direction from opposite Básiḍu, ending 6 miles W.S.W. of the point. It has 3 fathoms on the tip, and shoals thence to north-eastward. At 5 miles W. by S. of the point there are  $2\frac{1}{2}$  fathoms; farther north-eastward 2 fathoms; and N.W. of the point only  $1\frac{1}{2}$  fathoms.

In the entrance channel, which is 2 miles wide between the pitch of the North bank and the north end of the flat, there are only  $3\frac{1}{2}$  fathoms; the channel then lies between the North bank and Beacon shoal, and widens a little as far as the anchorage. The water deepens to 6 and 7 fathoms in the centre, and 8 or 10 near Beacon shoal: opposite the beacon there are 7 and 8 fathoms in it nearly all across. The water shoals regularly on the north sand.

**ASPECT of COAST.**—The Persian coast, from the low point (page 225) opposite Básiḍu, has an average direction of S. W. by W.  $\frac{3}{4}$  W. for  $14^{\circ}$  miles. A range of hills, 1,330 feet high, which commences a short distance West of this point, ends in a plain 7 miles to the westward of it. These hills, which run back and appear to join the mountains behind, have no remarkable peak on them; their outline is very irregular, and the eastern half is of light, the western, apparently volcanic, of dark colour. Their foot is about half a mile from the shore,

The great range opposite Básidu runs inland in a westerly direction, and at  $17\frac{1}{2}$  miles N.W.  $\frac{1}{2}$  W. of Básidu point, there is a notch or saddle, between two little peaks, on the summit of the range, known as Grubb's notch ; it is 2,950 feet high, and a useful landmark when rounding the Flat. It is only conspicuous in clear weather and when near the proper bearing.

At 4 miles S.W. of the coast range last described, another range of hills commences, its eastern end being close to the shore. It forms a detached mass of hills, about 7 miles East and West, by 4 miles, and has an extensive plain between it and the Grubb's notch mountains. On the north-eastern side it has a long ridge of light-coloured hills, of very jagged outline, and 960 feet high, running E.S.E. and W.N.W., and rather remarkable when on that line of bearing. The rest of the range is of dark volcanic hills, and there is a flat-topped conical hill near the shore,  $4\frac{1}{2}$  miles N.E. of Kung, which is conspicuous from the eastward, or when it opens out clear of the rest of the mass of hills. Three-quarters of a mile eastward of this is a similar smaller hill close to the sea, called al Búza.

**SOUNDINGS.**—There is shoal water upwards of a mile off al Búza, outside which there is a gut or khor of deep water, from half to one mile broad with 8 to 13 fathoms in it, running parallel to the general direction of the coast, as far as the point opposite Básidu. Outside this khor, and between it and the north bank, the soundings are 4 to 5 fathoms, so that, when standing in towards the coast, the increase of depth is a good guide for tacking.

At 2 miles to eastward of al Búza the shore forms a low sandy point, which this deep khor passes close to, called Ras ash Sháwari. About a mile North of it is the village of Bander Muallim in a date grove ; the shore forms a bay north-eastward of this point, in which native vessels anchor, having shoal water outside them. This place is called Bander Hamairán ; the shoal lies  $1\frac{1}{2}$  miles off shore, and has 4 fathoms inside it in which the boats lie, the deep khor being just outside the bank. It is chiefly used for laying up baghalas, there being no village there.

**Draught for vessels.**—A vessel drawing more than 17 feet should wait for high water to enter ; if drawing more than 20 feet, the use of this port is not recommended.

**DIRECTIONS** for entering and leaving Básidu road.—In the morning a sailing-vessel will generally have to work in, often against a fresh land wind ; in the afternoon the sea breeze generally blows about S.W. often very fresh.

A vessel coming from the southward or eastward should stand or work along the edge of the Flat, being guided by the lead, which must be kept going quickly, and keep in 10 fathoms till Tanb island, highest part, bears S.S.E.; by daylight the discoloured water is a good guide. A vessel not drawing more than 12 feet water may stand anywhere over the Flat, the bottom being soft. By night she would try to sight the Tanb, which would be best done by steering to pass a mile or 2 northward of it, as it would then not be seen more than 2 to 3 miles, owing to its brown colour and level outline: the soundings are no guide approaching the island, which is deep-to, especially on the north side. The tides run with great strength at and between it and the Flat; setting East and West 2 to 3 knots at springs. A stranger had probably best anchor on the edge of the Flat, and wait for daylight. It is, as a rule, not advisable to pass between the Tanbs by night, as the tides set strong, East and West, between them.

When Tanb bears S.S.E., it should be kept on that bearing while in sight, steering a little to either side of N.N.W. according to the tide: the island will be seen 14 to 15 miles, or until the hummocks on Kishm island bear N.E., when you will be well on the Flat, in  $3\frac{1}{2}$  to 4 fathoms, at low water. If you shoal to 3 fathoms, a course more to the westward should be steered until the water deepens. Vessels standing over the Flat, particularly at night, should keep a good look out for fishing boats at anchor near its outer edge.\*

Grubb's notch, if visible, is a useful mark: by keeping it N.N.W., after Tanb is out of sight, you will be clear of the western edge of the shoal part of the Flat. After shoaling on the Flat, the soundings will be  $3\frac{1}{2}$  to 4 fathoms at low water. When the hummocks bear E. by N., Básidu point will be sighted, about 8 miles distant, and should bear N.E.; you may then steer N.E. by N., keeping a good look-out for the beacon, on Beacon shoal or South bank, which does not show very well until brought clear of the mountains, and is visible not more than 6 miles. When the hummocks bear East you are clear of the shoal part of the Flat. When bearing from E.N.E. to E.S.E., the hummocks do not show well, being nearly in one. The bearing of the highest part of the table-land may be taken.

You then stand or work up the channel between the north and south banks; the course is about N.E. by N., with the beacon well open on the starboard bow. The south bank is steep-to, and at

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\* The surveying vessel, on one occasion, passed, at night, about a dozen lying at anchor off Linja, in 17 to 20 fathoms, with their masts down; so that even by day they are not seen till close to.

2 and 3 miles south-westward of the beacon, 10 fathoms, the deepest water in the channel, is very close, so that it is advisable to tack in the deep water in that part, or to haul more to northward, if running in. Nearer the beacon there is deep water also at some distance off it, so that here the deep water is not a warning of approach to the danger. At half tide the south bank shows well, either by breakers on it, or, with a sea breeze, by the smooth water inside it. The beacon bearing N.E. will clear this bank; or beacon open to the right of the Khamír mountains, if seen, will keep a vessel in the fair-way and clear of the South bank until tolerably near the beacon. If the beacon and western hummock subtend an angle not greater than  $77^\circ$ , as measured by a sextant, you cannot be in danger of running on this shoal; when the angle becomes  $83^\circ$ , you will be quite close to the edge.

Be guided in your approach to the North bank by the lead, tacking when you shoal the water. Beware, if working in, of standing across the south-west tip of it, towards the main; as, on the opposite tack, you might not have water enough to recross it. A steamer, or sailing vessel running in or out with a fair wind, is apt to find herself unexpectedly on one side or other of the channel, from the tide catching her on either bow.

The beacon may be rounded at any distance, from half a cable, or even less, if a strong in-going tide, and light air, and a vessel should be prepared to anchor immediately on shoaling inside the gut.

**Coming from the westward,** take a departure from Linja, and steer a course for Básidu point, which should bear, when sighted, from E.N.E. to N.E. by E. If working up from Linja you may stand well over to the Persian shore, till the point is sighted, taking care to tack on deepening your water, which you will do near the shore reef. The tide setting somewhat across the course, renders attention necessary; if an in-going tide, you may get set north-eastward, between the North bank and the main; or if an out-going tide, southward, towards the south end of Beacon shoal. Either of these is of common occurrence by night. In other respects the directions above given may be followed.

**Inner passage.**—This has been used frequently; there appears to be as much water in it as in the one round the flat. It would save a steamer about  $1\frac{1}{2}$  hours, and a sailing vessel perhaps a whole tide, if a strong north-east breeze were blowing. Stand close along the south coast of Kishm island, from opposite the salt hills or Namakdán (page 218), known by their dark colour. The channel is nowhere

much more than a mile broad, having the flat on its south side, along the edge of which the lead would be a guide. Stand close past Dastakán point; a cable's length is quite safe, and then haul to W.N.W. till you pass over the tail of the beacon shoal, probably in  $3\frac{1}{2}$  fathoms low water; and when you deepen over it, which you will do at once to 6 and 7 fathoms, haul on a wind, if a working breeze, and stand over to the north bank; and when you shoal on that, tack, and proceed as before directed: you will sight Básidu point shortly after passing Ras Dastakán. This channel should not be attempted by night, but by day there is no reason why it should not be used. It has been used by a steam vessel drawing 14 feet.

**By Night** a stranger, or vessel of large draught, had best anchor on the flat, and wait till daylight. A vessel might go in, particularly on a moonlight night, by feeling her way round the edge of the flat, or, if coming from the westward, by taking a departure from the Linja coast, and steering for the point. A fire would be made on the point, in answer to blue lights from the ship, if seen. It would be advisable to keep along the north bank by the lead, till opposite the place, and she should avoid getting on the wrong side of the north bank.

**JEZIRÁT TANB**, formerly called by English seamen the Grea Tanb, is 165 feet high, of brown colour, level outline, and 2 miles across. It is visible 14 to 15 miles, and there is a little peaked hummock near the north-east corner, which shows well from north-westward or south-eastward. This is the observation spot in lat.  $26^{\circ} 16' 11''$  N. and long.  $55^{\circ} 19' 26''$  E. There is a large banyan tree on the low ground on the south side, near a well of indifferent water, the only water on the island. It is uninhabited; at times a few cattle are brought over from the main for pasture, the island being covered with coarse grass and shrubs. There are some wild antelopes on the island; and fine oysters can be obtained.

Tanb island lies 15 miles nearly south of Dastakán point, and is deep-to on the north, east, and west sides, where 20 fathoms are one to  $1\frac{1}{2}$  miles off. On the south side soundings are irregular, see next paragraph. The north point is deep-to; the channel between Tanb and the flat is 8 miles wide.

**Rocky Patch.**—There is a rocky flat extending 4 miles to southward of Jezirát Tanb, with overfalls, and near its southern edge, at 4 miles S.S.E. from the south-east corner of the island, is a 7-fathoms patch with 12 fathoms close-to all round, but no danger. The water to southward of this flat deepens rapidly to 40 fathoms, and at 3 miles



from the shoal patch there are 80 fathoms, which is the deepest water inside the gulf.

**ANCHORAGE.**—The best is on the south side of the island, in 6 or 7 fathoms, opposite the banyan tree. The tide-stream runs very strong, East and West, on this side of the island. A vessel might also anchor on the east side, in 10 fathoms, half a mile off shore, where she would have less tide, and be sheltered from the shamál, but exposed to the nashi. This is preferable for a steamer; the water shoals quickly when approaching the east side.

**CAUTION.**—Foul ground extends a short distance off the south-west corner, and at half a mile from the island is Clive rock, a detached sunken rock, with only 7 feet on it, and 5 or 6 fathoms close to all round. From it the extremes of the island bear E. by S. to N.N.E. A vessel should not come under 15 fathoms when rounding the south-west point of the island.\*

**COOTE SHOAL.**—This shoal ground was reported in 1844 by the East India Company's ship *Coote*, which vessel obtained a cast of 11 fathoms in passing at night.

In February 1878, Lieutenant Stiffe anchored a boat on the shoal ground, and carefully examined the neighbourhood. The bank is nearly circular about a mile in diameter, with 30 to 40 fathoms all round; it has  $4\frac{1}{2}$  fathoms least water, with a general depth of 7 to 10 fathoms, bottom rocky. The shoalest part, near the centre of the bank, is a ridge 2 cables long North and South, and is situated E.  $\frac{1}{2}$  N.  $4\frac{3}{4}$  miles from the hummock on the north-east part of Tanb island.

The tides make a strong ripple over the shoal, and run at the rate of 2 to 3 knots at springs.

**A Bank.**—In lat.  $26^{\circ} 20' 45''$  N., long.  $55^{\circ} 11' 30''$  E., H.M.S. *Euryalus*, in 1879, obtained soundings in 9 fathoms with deep water round; the hummock on the north-east part of Jezírat Tanb bore S.  $58^{\circ}$  E., and the west extreme of Jezírat Nábiyu Tanb S.  $21^{\circ}$  W.

**JEZÍRAT NÁBIYU TANB**, called often by the natives only Nábiyu, is of triangular shape, one mile long in a north-west and south-east direction, and three-quarters of a mile broad at the south end. It has a dark hill on its north point, with two little peaks 116 feet high, visible 12 miles: the south end is about 50 feet high, and level, the space between being a low plain, so that from a distance the island makes in two parts. It is barren and uninhabited, has no water, and lies W. by S. from the Tanb, the channel between being

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\* E.I.C. sloop of war *Clive*, discovered this rock by striking on it in 1835.

7 miles wide, with soundings of 35 fathoms. The soundings between the island and the flat are 40 to 50 fathoms. It lies 23 miles off the nearest part of the Persian coast, about Linja.

Nábiyu Tanb is safe to approach to a quarter of a mile, there being no reef except on the north-east side, where it extends about 2 cables off shore. It is deep-to, and the soundings are no guide, there being 30 to 50 fathoms within a mile. The anchorage is bad, as there is little or no shelter in a shamál, and the tide will swing a vessel stern on to the wind, making her very uneasy : if obliged to anchor, do so on the east side in 12 fathoms, a third of a mile off the island.

**DIRECTIONS.**—A ship may pass to the southward of these islands, or to the southward of Abu Músa, if working up or down the gulf, the sea being quite clear ; but it is preferable to keep to the northward of them, as she would then be able to anchor on the flat, if the wind fall light, and tide be against her ; or if a shamál set in, would be conveniently near the Persian coast for shelter.

**JEZIRAT ABU MÚSA**, always called Bu Músa, is an island of square shape, about  $2\frac{1}{2}$  miles long, N.N.W. and S.S.E., by  $1\frac{3}{4}$  miles broad ; it is mostly low, with a number of isolated, dark, volcanic-looking hills near the sea. A little north of the centre a sugar-loaf peak, of dark colour, rises 360 feet above the sea and is visible 20 miles ; this is in lat.  $25^{\circ} 53' 9''$  N., and long.  $55^{\circ} 2' 21''$  E. The island, is generally visited by the Shaikh of Sharja in the hot season, and also by fishing boats from Sharja. The Shaikh has planted date palms, and keeps horses here, and a number are bred on the island. About 50 Arabs look after the horses, and also some sheep and goats. Wells have been sunk, and good water can be obtained. It lies S. by W.  $\frac{1}{4}$  W. from Nábiyu Tanb, the channel between being 21 miles broad and quite clear, with soundings somewhat irregular from 30 to 55 fathoms ; 6 miles North of it is a small 15-fathoms bank.

**Caution.**—A reef, with rocks above water in places, extends a quarter to half a mile off shore, except at the south-east corner, which is low and sandy. With the great peak bearing W.S.W. there is a detached sunk rock 4 cables off shore, with 7 fathoms close to it.

Abu Músa is 32 miles distant from the Arab coast, the soundings are from 25 to 35 fathoms for 11 miles from the island ; and thence all under 20 fathoms as far as the coast ; being at the commencement of the Great Pearl bank.

**Anchorage.**—The anchorage at the island is indifferent, being in deep water ; the best is off the south-east corner, in 12 fathoms, very close in.

## COAST FROM KISHM ISLAND TO RAS BISTÁNA.

The mountain range continues to the westward from Grubb's notch (page 229), and,  $11\frac{1}{2}$  miles W.  $\frac{3}{4}$  N. from it, there is a small peak on the top of the range, elevated 3,900 feet, and conspicuous from the sea; it has been named Linja peak. The coast range near Kung has been already described; between it and the detached mass of hills, called Jebel Bistána, the land forms a long slope up from the coast, which is sandy, to a height of 200 or 300 feet, ending to the northward in cliffs, between which and the mountains is an extensive low plain, swampy after rain.

The tides are from one to 2 knots, or more, along this coast, especially round the points and on the flat; the stream runs everywhere about 3 hours after high or low water.

**KUNG**,\* a large fishing village,  $3\frac{1}{2}$  miles to north-eastward of Linja, extends for half a mile along the sandy shore, and is chiefly built of mat huts; it may contain 2,000 to 3,000 inhabitants, who own many boats. Much pottery, of a common description, is made here. At the west end of the village is a large white ruined building, the old Portuguese factory, and opposite to it a round fort, surrounded by the sea at high water. There is a large date grove, and some round trees behind the village, and much cultivation; a few supplies might be obtained, but not so well as at Linja. The landing is bad at low water, as the sandy beach dries off about a quarter of a mile, in ridges, with a foot or two of water inside.

The anchorage at Kung is in 5 fathoms, mud,  $1\frac{1}{4}$  miles from the shore, there being a small flat, with  $2\frac{1}{2}$  fathoms on its edge, extending a mile off, with  $4\frac{1}{2}$  fathoms close to it; this anchorage is sheltered from all winds, except the suhaili. Just outside the anchorage is a continuation of the gut or khor, already mentioned as lying close to the coast at Ras ash Sháwari, which has here 8 fathoms in it; outside which, at  $2\frac{1}{4}$  miles off shore, the water shoals to 5 fathoms on the flat, and the depth gradually decreases to the eastward towards Kishm island, and to the southward gradually deepens to 10 fathoms at 8 miles off.

Between Kung and al Búza (page 229),  $4\frac{1}{2}$  miles to the north-

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\* This was formerly a very considerable place, as the many mounds and ruins attest; there are remains of considerable hummums (baths), &c. The old factory, in a very tottering state, is a large square building of several stories, and appears to have been commodious. The fort, or battery, is well built, and has vaulted chambers underneath. This place was occupied by the Portuguese after their expulsion from Hormúz, and even down to the 18th century. Close to the westward of the factory is a large excavation, which the Arabs stated to have been a dock.

eastward, the coast forms a small slight bay, which is all shallow ; there are two date groves near its shore.

**LINJA**, also pronounced Linga and Linya, one of the most flourishing towns on the Persian coast, is well built, extending in a narrow strip a mile along the shore, and may contain about 10,000 inhabitants, chiefly of the al Jowásim tribe. It has a nice appearance from the sea, having a thick grove of date trees behind it, while the houses are of light colour ; it shows best in the forenoon, when the sun shines on the houses. The highest buildings are two towers, a quarter of a mile apart ; the western of which is 70 feet high, and may be seen 8 to 9 miles ; on the eastern, which is a little lower, and forms part of the Shaikh's house, the flag is shown ; this is the observation spot in lat.  $26^{\circ} 33' 5''$  N., and long.  $54^{\circ} 53' 32''$  E. : there is a detached date plantation on the coast, half way between this place and Kung. The town is partially defended on the land side by an insignificant wall with towers ; outside the walls, behind the trees, are many domed water cisterns, some new and very large. A breakwater has been built in front of the town, enclosing a space of about 100 yards, in which boats lie dry at low water, to repair, &c., and small ones to load and unload. Upwards of 100 large and small baghalas belong to this port, some of which trade to India, &c. ; and they send 50 boats to the pearl fishery. Baghalas from 100 to 600 tons, and other boats are built here. The government of this place is now administered by the Persians. From this place a foot messenger will reach Bushire in 7 to 14 days, according to the season. The Persian gulf Mail steamers call here weekly. An agent of the British Government, who is a native, resides here, also an agent for the British Mail steamers, and a postmaster. A detachment of Persian troops has been recently stationed here.

The trade has much increased ; the imports are cattle, mostly re-exported, canvas, coffee, coir, piece goods and twist, dates, drugs, fuel, fruits, grain, metals, mineral oil, pearls, provisions, salt, seeds, mother-o'-pearl, silk, sugar, tobacco, spices, tea, timber and woollen goods, and the exports are nearly the same articles, the largest item being the pearl trade.

**Supplies.**—Good water is obtainable, also cattle, poultry, vegetables, rice, flour, &c. ; firewood, but not enough for steam purposes. It is, perhaps, the best place in the gulf to get any iron-work made, or repairs executed, but of course the workmanship is very rude.

**Pilots** for the Shatt al Arab or Basra river can sometimes be had here.

The **ANCHORAGE** is in 5 fathoms, half a mile off shore, the holding-ground good, being clay bottom: it is sheltered from all winds except the suhaili, which, as at Kung, sends a heavy sea into the road, but this wind is always of short duration. Outside the anchorage is a khor, or belt of deeper water, with 7 and 8 fathoms, beyond which it shoals again to  $5\frac{1}{2}$ , and then deepens to 10 fathoms at 5 miles south of the town.

**Kalah Lashtán\*** is a hill with a sloping top and precipitous sides, about 600 feet high,  $4\frac{1}{2}$  miles N. by W.  $\frac{1}{2}$  W. from Linja; its top shows behind that place over the rising land, from which it is quite detached; when bearing West to W.N.W. it is very conspicuous, having a quoin shape.

**Ras Kharyú**, or Jísha point, is low and sandy with rocky beach, 3 miles from Linja; from this place the coast runs N.E.  $\frac{1}{4}$  E. nearly straight, past Linja and Kung. Close to the eastward of it a slight bay is formed, in which, one mile from the point, lies the small village of Jísha or Yísha, which may be known by two towers, the western and larger, a round one; there is a date grove behind the village, and a few dates a little inland from Jísha point. The inhabitants are of the al Jowásim tribe, and are fishermen and cultivators; they may be 100 to 200 men. Good water is easily obtainable.

**Caution.**—A small spit extends a cable off shore, half way between this place and Linja, and to S.E. of the point a shoal spit extends  $4\frac{1}{2}$  cables from it. Ras Kharyú is steep to to the southward, there being 10 fathoms at 2 cables' distance, and 14 fathoms just outside that depth; outside this it shoals again to 7 fathoms, and thence deepens to 10 fathoms at 3 miles off; so that deepening the water is a warning of approach to the low point by night, as on the whole of the coast between Shinás and the point opposite Básidu. It is dangerous to shoal on the inshore side of this khor when standing in towards the coast.

**Anchorage.**—The anchorage is opposite Jísha, in 4 fathoms, clay, about half a mile off shore.

**RAS ASH SHINÁS**, the southernmost point of the Persian coast, is very low and sandy, and bears S.W. by W.  $\frac{3}{4}$  W. 3 miles from Ras Kharyú. Between these points is a deep bay, called Shinás bay,

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\* The top of this hill is covered with ruins, has a wall with a gate, also ruinous, built along its edge where accessible: the remains of many water tanks on it show it has been an important stronghold. Dr. Gemelli Carreri visited it in 1694, when nothing was known of its origin; and it appears to have been much in the same state it now is.

with soundings of 6 fathoms and under, affording good anchorage sheltered from the shamál ; in a nashi also there is little sea, as it is broken by the Básidu flat, and Kishm island. Ras ash Shinás is quite free from danger, the soundings shoal gradually from 20 fathoms at 4 miles southward, to 10 fathoms at one mile distance, thence deepening again to 13 fathoms close to the point ; this is the end of the khor, or singular deepening of the water close to the Persian coast often mentioned already.

The tide runs strong round this and Ras Kharyú (Jísha) points, causing a discolouration of the water, which has the appearance of a spit.

**Shinás** is a small village three-quarters of a mile from the shore, on the west side of the bay, and is not seen from seaward, owing to a thick grove of date trees to the southward of it ; the inhabitants, 200 to 300 men of the al Jowásim tribe, are cultivators and fishermen ; they have a few boats hauled up on Shinás point, which serve to mark it, and take quantities of fish there in large seines. The only building visible from the sea is a white ruined tomb,\* on a little rising ground, nearly 2 miles N. by E. of the point, which shows well when the sun shines on it. At the east end of the date grove in front of the village is a large banyan tree, to the east of which are some low cliffs or broken ground near the shore, extending to within a mile of Jísha point. At  $2\frac{1}{2}$  miles north of the tomb is a hill, 400 feet high, the top of which is quoin-shaped, and conspicuous from the eastward, being seen over the rising ground which slopes up from the coast all along this part.

From Ras ash Shinás, Ras Bistána bears West, a little northerly, 9 miles, the intermediate coast forming a slight bay. A mile to the westward of the former point are some white sand-hills, about 30 feet high, close to the sea ; the rest of the shore is low and sandy, with rocky beach, the ground rising in a gentle slope in all directions to the foot of Jebel Bistána.

In the bay,  $3\frac{1}{2}$  miles to westward of Shinás point, and a quarter of a mile from the beach, is a domed white reservoir, which is a good land-mark, and a mile east of this a grove of date trees, where are four wells of good water quite near the shore, with a sandy beach for landing, which would be available as a watering place.

The anchorage would be partly sheltered in a shamál, and quite so in a nashi.

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\* This has been rather a handsome building, with a dome, now fallen in ; the inhabitants told us it was destroyed by the Wahhábi in the pirate times. It is the tomb of the Mussulman saint Shaikh Ráshid.

The soundings between Ras ash Shinás and Ras Bistána are regular, the 10-fathoms line being half a mile off Ras Bistána, and 2 miles from the coast east of it, deepening thence regularly to 20 fathoms at 4 to 5 miles off, and to 30 at 7 to 8 miles distance. In the bay, 3 fathoms are a quarter of a mile off, except for 2 miles west from Shinás point, where the 3-fathoms line is three-quarters of a mile off shore; with the south extreme of that point, known by the boats hauled up on it, bearing East, you are clear of this little flat. Off Bistána the 3-fathoms line is 4 cables off shore. A shoal, with  $3\frac{3}{4}$  fathoms, has been reported by H.M.S. *Kingfisher*,  $1\frac{1}{2}$  miles from Ras Bistána, probably in a S.S.W. direction.

**RAS BISTÁNA** is a broad and low point of brown colour; here the coast sweeps round to N.N.W. into Mughú bay; there are three little date trees a third of a mile westward of it, and 2 miles E. by N. from it is the small village of the same name, which has a round tower in it, and a domed reservoir on the rising ground behind. There is a date grove at this village, and another between it and the point. The inhabitants are chiefly fishermen, of the Beni Marázik tribe. By anchoring quite close, in 4 fathoms, off the village, boats bring the point W. by S., and are then partly sheltered from the shamál, which here blows about West. A ship has little shelter.

**JEBEL BISTÁNA**, called also Jebel Haiti, is a remarkable isolated mass of dark volcanic hills, about  $3\frac{1}{2}$  miles in extent, and one mile from the coast; it is of very irregular outline: the highest part is near the centre, and forms a ridge, visible 45 miles, near the southern end of which is a little peak which looks like a tower built on the summit, and is conspicuous, particularly from the eastward or westward. This peak is elevated 1,750 feet, and bears N.E.  $\frac{1}{4}$  E.  $4\frac{3}{4}$  miles from Ras Bistána; it is in lat.  $26^{\circ} 32' 58''$  N. and long.  $54^{\circ} 41' 28''$  E. The nearest part of these hills is 3 miles from that point, and has often been mistaken for it when at a distance, and the low land not in sight. The land slopes in a long gentle incline up to their foot, which is 200 to 300 feet above the sea.

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## CHAPTER X.

NORTH, OR PERSIAN COAST OF PERSIAN GULF. RAS  
BISTÁNA TO BUSHIRE.

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VARIATION,  $0^{\circ} 25'$  West in 1890.

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**GENERAL OBSERVATIONS.\***—The coast is bold, with ranges of mountains along its whole extent, which rise, in places, close to the sea. On this part are many towns and villages, at all of which small supplies of cattle and poultry may be obtained. The maritime population of the towns is Arab; the agricultural, Persian, or a mixed race of the two. The coast with the islands adjacent, belong to the Persian Government, who receive tribute from the chiefs of the principal towns, to whom the internal government of their own districts is entirely left. The towns are all similar to those already described, and there are date plantations, and some cultivation at most of them.

**JEZÍRAT SIRRI** is of triangular shape,  $3\frac{1}{3}$  miles long, and  $2\frac{1}{3}$  broad at its eastern end. It is low, with many small detached dark hills, none of which exceed 50 feet in height, and it is visible 12 miles. The hills, which appear to be chiefly volcanic, have nothing very remarkable about them. Its north-east point bears S.  $\frac{1}{2}$  W. westerly, 34 miles from Ras Bistána, which is the nearest point of the Persian coast. There are several rocks above water on the north and west sides, of which one, off the north-west corner, is half a mile off shore; also several sunken patches, all within half a mile of the island; the south side has foul ground off

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\* See Admiralty chart :—Persian gulf, No. 2,837*a*; scale,  $m = 0\cdot08$  of an inch.



it to a distance of half a mile, but the east side, and south-east low sandy point are clear of reef, and deep-to; there are 30 to 40 fathoms everywhere about a mile off the island, so that the lead is no guide approaching it. There is a small village near the north-east corner inhabited by about 20 families, who are cultivators, and have some flocks on the island; a little fruit and vegetables may be obtained, and perhaps a few cattle.

Sirri was formerly well peopled, and there are the remains of a small town, on the site of which the present village stands, and two ruined tombs, the northern of which has a spire. There are the ruins of a village with a circular tower on a little hill on the east side, and of another about the centre of the south side, where water is obtainable from wells, but the landing is bad.

There is a clear passage, 40 miles broad, between this island and Sir Abu Nuair, with irregular soundings from 45 fathoms to 19 and 17, approaching the latter island. Between Sirri and Bu Músa, the soundings are 40 to 45 fathoms.

The anchorage at this island is very indifferent, being close in, with flat rocky bottom, very bad holding ground; the least objectionable is on the south side, between the wells and the south-east point, about half a mile off shore in 7 or 8 fathoms, where you would be sheltered from the shamál and nashí, and if the anchors started, the vessel would drive off the island.

The observation spot at the N.W. corner is in lat.  $25^{\circ} 55' 4''$  N. and long.  $54^{\circ} 32' 57''$  E.

**JEZÍRAT NÁBIYU FARÚR**, generally called by the Arabs only Nábiyu, or the little, is an islet of circular shape, a little over half a mile across, with a remarkable dark-coloured saddle-hill on its east side, which is 120 feet high, and visible 14 miles. The rest of the island is low, and has brushwood growing on it; it is without water, and uninhabited, being only occasionally visited by fishing boats; the peak is 24 miles S.S.W. of Ras Bistána and in lat.  $26^{\circ} 7' 3''$  N. and long.  $54^{\circ} 27' 0''$  E.

The anchorage is bad; if obliged to anchor do so off the south-east corner, in 8 to 10 fathoms, a quarter of a mile off shore; the island is too small to break the sea much, and the tide is strong enough to swing a vessel stern on to the sea. The water is deep all round the island, there being 40 to 45 fathoms one to  $1\frac{1}{2}$  miles off, so that the lead is no guide.

The channel, 12 miles wide between this island and Sirri, has 45 to 50 fathoms in it; and between Nábiyu and Farúr, there is a clear channel 8 miles wide, with soundings of 50 fathoms.

**CAUTION** is required in passing the north-west side of Nábiyu, as a reef of rocks, partly above water, extends from it at least half a mile. There is also a small reef on the west and south sides, but none off the east side.

**JEZÍRAT FARÚR** is of oval shape, 4 miles long North and South, by  $2\frac{1}{2}$  miles broad ; it has low cliffs 30 to 40 feet high, all round, and it is covered with dark volcanic hills. The highest of these is a table-topped conical peak,  $1\frac{1}{2}$  miles from the north coast, and 465 feet high, which is visible 25 miles, and bears S.S.W.  $\frac{1}{2}$  W., 14 miles from Ras Bistána. Farúr is uninhabited; at times cattle are brought over from the main to graze, and it is visited by the Mughú men, to whom the island belongs, to fish and cut wood, &c., for fuel, there being many small trees and shrubs, and after the winter rains much coarse grass. In a ravine on the east side are the ruins of a large village, and a few date trees with some wells, but little water. There are one or two detached rocks above water on the west side, within a cable of the shore ; there is no reef off the island in other parts more than half a cable. A boat may land at any of the little sandy bays, which are seen in the gaps in the cliffs. It is quite deep to all round, 40 fathoms being under a quarter of a mile off the cliffs, except, on the west side, where Capt. Brucks states there is a rocky flat a mile in extent, with soundings decreasing from 6 fathoms on its edge.

The tides set strong round this island ; and off the south point especially cause the appearance of a spit extending off the island, when they set against the wind, the water being then also discoloured. Owing to the boldness of the soundings, which would seem to render it impossible to run on it, to its height and dark colour, this island is easy to make or run for at night, or in thick weather, but, with the haze of a summer shamál, there is a possibility of its not being seen till unpleasantly close. It must be remembered that at neither of these last three islands is the lead any guide.

No vessel should anchor here, if it can be avoided ; the least objectionable position is off a little sandy beach on the south-east side, but she would have to drop her anchor at one to  $1\frac{1}{2}$  cables distance off shore, in 15 to 20 fathoms. The south point is in lat.  $26^{\circ} 14' 53''$  N. and long.  $54^{\circ} 31' 8''$  E.

Capt. Grubb, I.N., of the sloop of war *Ternate*, in 1822 reported a bank of 6 fathoms, with Farúr N.  $8^{\circ}$  E., distant 2 miles. The *Marie* was steered three times over this position, without finding it; it must either be very small, or further from the island than that

officer estimated. Careful search has since been made for it by Capt. Stiffe, without finding any shoal water near the assigned position.

**NAJWA AL FARÚR** is a shoal, dangerous for a large ship, lying between Farúr and the main. It is of rock and sand, the part where the soundings are under 5 fathoms being  $1\frac{1}{2}$  miles in extent. Near the middle is a narrow ridge, upwards of a mile long, in a north-north-east and south-south-west direction, on which the soundings are only 3 fathoms, and in one part 15 feet at low water springs. It is steepest on its south side, where 20 fathoms are half a mile off the shoal part; and a vessel should not approach it to less than that depth. On the east and west sides there are 15 fathoms close to the edge, and 20 at a distance of 2 miles; between it and Ras Bistána, the soundings are irregular, 8 to 22 fathoms, with overfalls and rocky bottom. The tides set strong over the shoal, and between it and the point, causing great discolouration of the water, with strong rippings; the bottom is visible on the shoalest part in fine weather. It is frequented by fishermen from Bistána. The highest peak on Farúr bears from S.  $\frac{1}{2}$  W. to S.S.W. from either end of the shoal, and S. by W.  $\frac{1}{4}$  W. from the shoalest part; whence also the tower peak on Jebel Bistána or highest part of those hills, bears N.E.  $\frac{1}{4}$  E., and the centre of Jebel Turanja is in one with the west end of of the Yarid hills.

A bank  $1\frac{1}{2}$  miles long with depths of 11 to 8 fathoms, sand, latitude  $26^{\circ} 22' 30''$  N., longitude  $54^{\circ} 37'$  E.; Farúr island bearing S.W., distant 6 miles, was discovered in 1873 by H.M.S. *Nimble*.

The channel between Farúr shoal and island is  $6\frac{1}{2}$  miles wide, and clear, with soundings increasing from the shoal to 44 fathoms at a mile north of the island; the passage between it and Ras Bistána is 5 miles wide, with irregular soundings over rocky bottom. See *Kingfisher's* bank, page 239.

**DIRECTIONS.**—A vessel may use, indifferently, either of the above two channels, or the one south of Farúr. By daylight, unless very hazy, there is no difficulty. By night, if coming from the eastward along shore from Linja, she might hug the coast as far as Ras Bistána, keeping in 10 fathoms, and bearing in mind that the water deepens to 14 fathoms, close to Jísha and Shinás points; but if coming from the westward or south-eastward, the channel south of the shoal is preferable. By keeping in soundings of 25 to 30 fathoms she would pass in about mid-channel; but generally the island shows so well at night that there would be no risk in steering for it; 20 fathoms would be very close to the south side of the shoal. The tides are strong, setting about East and West.

**TIDES.**—The tides are strongest off Bistána, but are felt all along the coast, and especially between Kais island and the main; the stream sets regularly up and down the coast, and runs 3 hours after the turn of tide.

**MUGHÚ BAY** is a large bay immediately to the westward of Ras Bistána, and lying between that point and Ras Yarid; it is free from danger, and affords good anchorage in all winds except the suhaili; the holding ground is good, being mud, and the water of moderate depth, under 10 fathoms in the bay. The shore is low and sandy, with rocky beach towards Ras Bistána, and the land slopes gradually up from it to the foot of Bistána and Yarid hills; between those hills, the slope ends 2 or 3 miles from the coast, as behind Linja, in precipitous broken ground towards the low plain already described, lying inland of Jebel Bistána. In this bay are the towns of Mughú and Dúan.

**RAS YARID or JARD**, the north-west point of this bay, is a low broad cape, the coast bending round very gradually; it is difficult to fix any exact locality for the name; the south-west extreme bears from Ras Bistána N.W. by W.  $\frac{3}{4}$  W., distant  $12\frac{1}{2}$  miles. On this cape stands a rugged mass of volcanic hills of dark colour, called Jebel Yarid, having an elevation of about 1,200 feet, and visible 35 miles. They rise everywhere within half a mile of the shore, which slopes up to their foot, and have a jagged outline; the general mass being of the same height, they have, as a whole, a table-topped form, so that it is difficult to identify any particular peak. From the westward, the north bluff is conspicuous. As they are quite isolated, and occupy a space of only 5 by 4 miles, a bearing of their centre may be taken without much error.

**CAUTION.**—A flat with less than 3 fathoms, extends 2 miles off the south and west sides of this point, with 7 fathoms close to its edge, and 12 fathoms within half a mile; on the south side, as there are 12 and 13 fathoms 4 or 5 miles off, the soundings are not a guide for the distance off; but, when standing towards it from the offing, the water will deepen to 16 fathoms before shoaling on its edge. By day, the discolouration of the water indicates approach to it.

**MUGHÚ.\***—From Ras Yarid the coast bends round to East and E.N.E. to this town, which lies North, a little easterly, from Farúr peak, and about a mile to the eastward of the foot of the Yarid hills, the eastern slope of which bears from it N.W. by N. Mughú has

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\* This place was for a short time the station of the I.N. squadrom, and some tombs of officers and men are still to be seen about a mile west of it.

several round towers, one much larger than the rest ; there is a date grove behind, and to the westward of the town ; to the eastward there are low sand-hills for about 2 miles. It contains about 200 men of the Beni Marázík tribe, and sends 20 boats to the pearl fishery ; the shaikh of this place has authority over the village of Hasína.

**The anchorage**, for a shamál, is opposite the town, and as close in as possible ; 4 fathoms being nearly a mile off shore, bottom clay ; the shamál blows here at West, so that unless close in, the shelter is not good. In 4 fathoms you have the edge of the Yarid flat W.S.W., which breaks the force of the sea, but some swell comes in at S.W., making a vessel uneasy. The soundings decrease regularly into the anchorage, and the native vessels will be some guide, as they are always as near the shore as they can get. In a suhaili, though there would be much sea, the holding ground is so good, there would be little fear of a vessel driving.

**Supplies.**—Water may be obtained here, also cattle, and a few vegetables, &c.

**Dúan** is a small village on the coast at the bottom of the bay, and  $3\frac{1}{2}$  miles E. by S. of Mughú, the coast forming a slight bay between them. It has a date grove behind, and for some distance on each side of it, and may be known by a small fort, with two white towers, the larger of which is square ; they show well against the dark trees behind, especially in the afternoon. Good water, which has to be brought about a quarter of a mile, is obtainable here, but hardly anything else. It is a poor place, with perhaps 100 men, who send a few boats to the pearl fishery ; some cultivation is carried on by people living in a detached little village, at a short distance inland, and it is under the chief of Cháarak. From Dúan the coast, which is desert, runs on an average S.S.E. for  $5\frac{3}{4}$  miles to Ras Bistána ; it is safe to approach to half a mile or 5 fathoms, but near Ras Bistána you shoal quickly from 6 fathoms to  $2\frac{1}{2}$  at 4 cables off shore.

The anchorage off this place is exposed to the shamál, and about a mile off shore. There are 10 fathoms here, at 4 to 5 miles off.

There is good shelter from the kaus anywhere along this part, but it would be a dangerous anchorage if a shamál followed ; if a vessel seeks shelter in this bay against easterly winds, it is recommended to stand so far up towards Mughú as to be in tolerable shelter if a shamál sets in ; or else to anchor with Ras Bistána bearing East or

E. by S., so as to be able to weigh and stand round that point on the appearance of the shamál.

**CHÁRAK BAY.**—From Ras Yarid the coast sweeps round to the north-westward for 10 miles to the town of Cháarak, and then turns west-south-westward for 4 miles to Táwana point, forming a great bay, known as Cháarak bay, the soundings in which are regular, and all under 10 fathoms. There is good anchorage off the town of Cháarak, sheltered from the prevailing winds, but open to the suhaili. From Jebel Yarid, as far as that town, the coast is low and sandy, and forms a slight bay.

It is safe to approach by the lead to a mile, after passing the flat off Ras Yarid. The fishing village of Hasína stands on the coast,  $6\frac{1}{2}$  miles S.E. of Cháarak town. The anchorage off it is quite open to the shamál; behind this village the land slopes up to the foot of Yarid hills.

**Cháarak** is a small town, the chief of which has under him the coast from this place to Kalat al Abeid, and the islands Kais and Shaikh Shuaib: he pays a tribute to the Persian government. The town has several towers, and a grove of date trees behind it, over which is seen a small fort, built on a hillock north of the town, 80 to 100 feet high. The Shaikh's house is in lat.  $26^{\circ} 43' 34''$  N. and long.  $54^{\circ} 16' 30''$  E. At  $1\frac{1}{4}$  miles West of the town, stands Jebel al Hamar, a dark hill 370 feet high, and conspicuous from the south-westward, when it appears quoin-shaped; it is visible 19 miles.\*

A mile eastward of the town is a creek, formed by a large water-course, which here enters the sea, in which most of the boats are hauled up; there is a small detached village on its west bank. The sandy beach in front of the town dries off 2 cables in ridges, making the landing bad at low water. The town has a cleanly appearance, and the inhabitants are friendly and civil. The shaikh's house, which is white, stands near the centre of the town. Cháarak contains about 1,000 men of the Al Ali tribe, and sends 100 boats to the pearl fishery; some baghalas also belong to it, which trade to India.

**Supplies.**—Good water is obtainable; firewood in small quantities, and dear. Cattle, sheep, goats, fish and fruit can be obtained. There is said to be a good pass into the interior from this place.

**The anchorage** is in 3 to 4 fathoms, mud, with Táwana point W.  $\frac{1}{2}$  S., town bearing North to N. by E. Some swell is felt here in

\* Half a mile to south-westward of it is a low light-coloured table hill, called Jebel Lamba, which has the ruins of a hill fort on it.

See Admiralty plan on chart No. 2,837a.

a shamál, which blows at West, and the closer you are in the better will be the shelter. In easterly winds the shelter is complete.

**Táwana** village stands on a little point, forming the west extreme of the bay at 4 miles W.S.W. of Cháarak. It is an insignificant place, with few date trees, and has a castle on a rocky hillock on the extreme point, 50 to 80 feet high. It contains 50 to 100 men of the Al Ali tribe. Good water is obtainable. The coast between this and Cháarak forms two little rocky points, with sandy bays between; rocky spits extend one-third of a mile off these, and off Táwana point, having 8 and 10 fathoms close to their edge. The plain between the mountains and sea is less than a mile in width at Táwana, and decreases to the westward. From a little point half a mile W. by S. of Táwana the coast runs W. by N.  $12\frac{1}{2}$  miles to Jirza; the mountains come quite close down to the shore, which is deep-to, there being 20 fathoms a mile off; and from 12 it shoals at once to 3 fathoms. The deepest water between this part of the coast and Kais island is 26 fathoms.

**Anchorage.**—A small vessel can anchor off Táwana, half a mile off shore, with the fort on the point bearing W. by N., and sheltered from the shamál by the spit.

**ASPECT of COAST.**—The range extends, apparently with valleys or gaps in it, from Linja peak to W.N.W. passing some distance inland of Cháarak.

**Jebel Turanja\*** is an excellent landmark, conspicuous in every direction when out at sea, and seen from Básidu, all round, till bearing about east, when it gets hidden by the range further to westward. It is a round-topped, or flattened dome-shaped mountain of light colour, elevated 5,150 feet, and visible 70 to 80 miles; on the summit, near the centre of the south side, is a small hummock. This mountain is part of the range above mentioned, which continues from it to the westward for some distance; there is a lower range between it and the sea, which hides this mountain when within 10 or 12 miles of the coast. Jebel Turanja is 16 miles N.W. by N. from Cháarak town. The coast range commences north of Cháarak, is of light colour 2,000 to 3,000 feet high, and its foot about a mile from the coast: it extends to the westward at about that distance from the sea till past Chíru: there is a great valley between this and the Turanja range, said to be well cultivated, and to contain many villages. To the eastward of Cháarak, the extensive plain already mentioned, behind Linja and Bistána, comes down to the sea, and on the north side of it are several

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\* This name is given by the Arabs, on account of its supposed resemblance in shape to a citron; it is said great quantities of salt are found in this mountain.

detached masses of lower mountains in front of the Linja peak range : they are chiefly of dark hills, the great ranges being all of light colour, and may be 1,000 to 2,000 feet high : there is a valley between them and the coast range commencing at Chárak, from which the water-course described at that place issues ; it is probably the pass into the interior. At the western end of the eastern of these masses of hills is a remarkable haycock-shaped hill, about 1,500 feet high, which lies 11 miles N. by E. from Mughú, and is conspicuous from Mughú bay, it is also visible from Chárak, at the north side of the low-lying land.

When far out to sea, a great mountain is seen N.  $\frac{1}{2}$  E. from Farúr island, belonging to a back range, probably not less than 40 miles from the coast, or than 9,000 feet high. In clear weather it is seen from sea, at least 100 miles off, when all the other mountains are out of sight.

**KAIS** or Gais is an island of oval shape,  $8\frac{1}{2}$  miles long East and West, by  $4\frac{1}{2}$  broad, with a channel, 9 miles wide at the narrowest part, between it and the main ; and one of 27 miles between it and Farúr island, from which its centre bears N.W by W.  $\frac{1}{2}$  W. The island is visible 13 to 14 miles, and of even, convex outline, sloping on all sides gradually up towards the interior, which is a level tract about 120 feet above the sea. There are many trees scattered about the island, and several villages with date plantations on the north side : it is under the Shaikh of Chárak, and sends 50 boats to the pearl fishery. The shores of the island are low, the beach sandy, with rocky points ; its east and west points are very low cliffs ; it is of light brown colour, and is very difficult to make at night. A reef, nowhere extending a mile off shore, surrounds the island on its north, west, and south sides with deep water within a short distance of its edge.

The north-east point is low and sandy, and has a large village on it, called Máshi, containing about 500 men of the Al Ali tribe, who are chiefly employed in the pearl fishery. It is the observation spot, in lat.  $26^{\circ} 32' 44''$  N. and long.  $53^{\circ} 54' 05''$  E. The village, built close to the shore, is of mat huts, excepting two square forts of masonry, a quarter of a mile from the point, and a round tower, a mile South of the point. It extends upwards of a mile along the sandy shore of a bay formed between the north-east and east points ; and the pearl boats, when not at work, are hauled up on the beach in front of the houses. There are a few date trees near the wells, quarter of a mile South of the square forts, and several banyan trees near the round tower. The north-east point is in latitude  $26^{\circ} 33' 37''$  N., and longitude  $54^{\circ} 1' 35''$  E.

The east point, of cliff about 6 feet high, bears S.E. by S.  $\frac{1}{4}$  S., nearly 3 miles from Máshi point, and there is a smaller rocky point,



at the end of the sandy shore, one mile N.W. of it ; from the east point the coast runs south for a short distance, curving round gradually to West and N.W. to the west point : there are one or two small date clumps on this side of the island, but no village.

From Máshi point the north coast of the island has an average direction of W. by N. for 4 miles, forming a succession of sandy bights, with little rocky points, to the north point, which is of cliffs about 15 feet high : at  $1\frac{1}{4}$  miles from the north-east point is a small village, called Dih, with several date plantations and some gardens, and half way between this and the north point are the ruins of an ancient Mohammedan town called Haríra\* extending for three quarters of a mile along the shore.

From the north point the coast of the island turns to W.S.W., and S.W. by W. for  $3\frac{1}{2}$  miles, to the west rocky point, which is only a few feet above the sea. Three-quarters of a mile W.S.W. of the north point, is a small village in a date grove, called Safil, which has a round tower at each end. It contains about 200 men, who are fishermen and cultivators. Landing is bad at low water, owing to a reef which dries off 2 to 3 cables. The interior of the island is cultivated in parts, and there are many flocks and herds. Water can be obtained by digging wells, almost anywhere on the shore, but would be probably brackish after a long drought.

Máshi bay is clear of reef at its northern end, there being 5 fathoms at 4 cables off shore, deepening regularly to 20 fathoms at 2 miles off ; a small sand spit extends half a mile N.N.E. of Máshi point, but it has not less than 3 fathoms on it, till within 2 cables of the shore. Off the pitch of this spit 20 fathoms are within a mile of the point : the tide running over this causes the water to break, and gives it the appearance of a danger. The southern part of Máshi bay has foul ground extending two-thirds of a mile off shore, in a northerly

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\* Of this city, which flourished in the 12th century, and was the great depôt of trade with India and China, before Hormúz rose into importance, none of the buildings remain standing ; it is a heap of mounds, with tottering masses of masonry here and there ; the ruins of a minaret of well-cut stone, close to which are many fallen pillars, part of the mosque to which the minaret belonged, are the only architectural remains. Great quantities of broken pottery, some of fine quality, are found scattered among the débris. A quarter of a mile South of the town are several ruined water reservoirs of large size, one of which measured 120 feet by 24, and was still 24 feet deep ; although much rubbish, with the arched roof, had fallen in : another was 145 feet long ; they were faced with masonry inside, and had been well coated with cement. From these a kanát, or subterranean reservoir, a quarter of a mile in length, led to the town ; it is about 20 feet below the level of the ground, has small shafts every 20 yards, and four entrances, consisting of flights of steps cut in the rock leading down to the bottom through an arched door, also cut in the rock. It is much choked up and contains no water at present.

direction from the east point. The south-east corner is clear of reef, and has 20 fathoms about a mile off. Foul ground extends off the south and west side of Kais about half a mile, with 6 and 8 fathoms close to its edge, thence deepening rapidly. On the north side, a reef commences opposite Dih village, with 2 fathoms on its edge, widening to the westward; off Safíl it is two-thirds of a mile off shore, and between that place and the west point nearly one mile in extent. 20 fathoms are 2 miles off shore opposite Haríra, and to the north-westward of the island, about 3 miles off; from this depth it shoals quickly to 13 fathoms.

**Supplies.**—Good water is procurable at Máshi, also cattle, vegetables, &c.

**ANCHORAGE.**—The best anchorage is off Máshi point: in the summer, when easterly winds are not experienced, a sailing vessel should anchor in 6 to 8 fathoms, mud, in Máshi bay, with the square forts bearing W. by S., which anchorage is quite sheltered against the shamál: but in winter, if an easterly gale comes on, she would have to ride it out in a heavy sea.\* In the winter, therefore, a sailing vessel had better anchor in 10 fathoms, mud, with Máshi forts bearing South, about half a mile off shore, when she would be partly sheltered from the shamál, which here blows West to W. by N., by the reef off Haríra, and would be able to weigh if an easterly gale came on.

The anchorage off Haríra, open to the prevailing winds, is in 8 fathoms,  $1\frac{1}{4}$  miles off shore.

**DIRECTIONS.**—As the island is difficult to see at night, great caution is required while passing it outside, 40 fathoms being within 3 miles. On the north side, the lead is a better guide, but must be kept going quickly. The greatest depth in the strait is 36 fathoms, about mid-channel: if working through you must tack on the main by the eye, as the deep water is carried close in to the shore, which is clear of danger; on the island side, you may tack in 12 or 13 fathoms. It is not recommended to pass through the strait by night, unless the island can be seen.

**TIDES.**—It is high water, full and change, at Máshi at 12h. 30m. rise  $7\frac{1}{2}$  feet. The tides set strong through the strait, but are very weak in the deep water outside the island.

**Jirza** is a small village on the main, with a tower and date grove, barely visible from the north-east point of Kais, from which it bears

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\* See Admiralty plan of Kais anchorage, chart No. 2837a.

N. by W.  $\frac{1}{2}$  W.  $11\frac{1}{4}$  miles. It is situated in a bay, sheltered from the shamál when close in by a low point projecting to west-south-westward. between this place and Kalat al Abeid; the coast on both sides of Jirza is deep-to, having 20 fathoms within a mile of the beach.

**Kalat al Abeid\*** is a village on the coast,  $8\frac{1}{2}$  miles East of Chíru, with a large fort on a hill, quarter of a mile inland of the town: a round tower at the west end of the fort† is 250 feet above the sea. The village contains about 150 men of the Beni Ahmad tribe, all fishermen; there are a few date trees to the east of the town. Water is obtainable from wells and reservoirs at this place.‡

Between this place and Chíru there is a small range of hills, about 200 feet high, the base of which is washed by the sea, in front of the great mountains; the coast line also projects slightly between these places. About 3 miles West of Kalat al Abeid is a small spit extending half a mile off shore.

**The anchorage**, if close in, in 4 or 5 fathoms, sand, is sheltered from the shamál, the extreme of land to the westward, bearing about W. by S., and partly also from the nashi. In 8 fathoms, three-quarters of a mile off, there would be little shelter.

**CHÍRU** is a small town with a fort and large date grove, situated in a fine bay formed by a projecting low sandy point. It contains about 200 men, of the Obaidil tribe, chiefly fishermen, and stands on the shore of the bay, one mile N.N.E. of Chíru point. The Shaikh of this place, who has under him the island of Hindarábi, is subordinate to the chief of a town some distance inland. A few cattle might be obtained here, and water in small quantities. The fort is in lat.  $26^{\circ} 42' 38''$  N. and long.  $53^{\circ} 43' 48''$  E.

**Chíru point**, a very low and broad point, projecting considerably from the line of coast, lies 30 miles W.  $\frac{1}{4}$  S. of Cháarak town. On its east side the coast runs North and N.E. for  $1\frac{1}{2}$  miles, forming Chíru bay, which is a capital anchorage and easy of access in a shamál, but exposed to easterly winds; it is quite clear of danger, with soundings under 10 fathoms. A vessel should anchor opposite the village. The south side of this point is deep-to, having 20 fathoms at about one mile distance.

**SAMBARÚN** is a small rocky bank, S.  $\frac{1}{2}$  E.  $7\frac{1}{2}$  miles from Chíru point. It has not less than 6 fathoms on it; there are 30 fathoms all round at one to 2 miles distance.

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\* Often called Kalat by the Persians.

† There are the ruins of more extensive fortifications, and some water reservoirs, outside the present walls.

‡ The hills behind the town produce much salt, and may be seen streaked with white from a ship at sea; fine crystals of salt may be obtained here.

**CHÍRU to RAS NABAND.**—The coast continues high, with deep water close in. It is free from danger, and has the islands Shaikh Shuaib and Hindarábi lying off it. The projecting part for about 30 miles below Ras Náband is called Asbán. The mountains are all of light colour.

**Tides.**—The tide hour is only approximately known, it is probably from one to 3 hours. The stream is strongly felt in the strait between the islands and the main, but is weak in the deep water outside them, and opposite Ras Náband.\*

**HINDARÁBI ISLAND** is rather over 4 miles in length, East and West, by 2 in breadth; it is similar in appearance to Kais, rising gradually from the sides to the centre, which is flat, and about 100 feet above the sea; the island is of brown colour, and visible 9 miles. There is a large banyan tree on its south-east coast; the east and west points are of low cliff; the former is  $3\frac{1}{2}$  miles W.S.W. of Chíru point. There is a small walled village on its north coast,  $2\frac{1}{4}$  miles from the east point, containing about 150 men, and near it are a few date and other trees, with some cultivation. The N.W. tower is in lat.  $26^{\circ} 41' 9''$  N. and long.  $53^{\circ} 37' 11''$  E. There is water in wells, but brackish in summer. The inhabitants are fishermen and cultivators, and have some flocks on the island. It is surrounded by a reef, which, on the north side, extends a quarter of a mile off, and the landing at the village is bad at low water, in consequence; off the north-east and east sides, it is a little more extensive and deep-to. The reef on the south side has not been examined; it probably extends a mile off, and is very steep-to, having 30 fathoms close to outside. Off the west point there are some detached patches, to a distance of about half a mile, outside which is a flat extending 2 or 3 miles off, with 9 to 6 fathoms on it, and deep water close to its edge. There are 45 fathoms about 3 miles off the south side.

**Anchorage.**—A vessel might anchor off the village in 6 or 7 fathoms, rocky bottom, but this would be exposed to the shamál; with an easterly wind it is said there is not much sea at this anchorage. In a breeze, the strength of the stream would render a vessel uneasy on the weather tide.

**The COAST** from Chíru point runs nearly straight N.W. by W. for 14 miles, to Nakhílu point. The Chíru ranges of mountains, which decrease in height, and end at the latter point, rise close to the sea

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\* See Admiralty chart, Persian gulf, No. 2,837*b*, scale,  $m = 0.08$  of an inch.

along this part of the coast. There is a table-topped hummock 700 or 800 feet high, on the second range of low hills,  $7\frac{1}{4}$  miles N.N.W.  $\frac{1}{2}$  W. from Chíru point, and 3 miles inland, which is rather remarkable from the southward.

**CAUTION.**—A shallow flat of sand extends  $1\frac{1}{2}$  miles W.S.W. from Chíru point, the water will shoal at a cast from 16 to 6 fathoms on its outer edge, and thence quickly to  $2\frac{1}{2}$  fathoms at a mile off shore, and caution is necessary ; by day, the discoloured water defines its edge very plainly. The clear passage between this and the reef of the east point of Hindarábi, is only a mile broad, with 20 fathoms in it. The western entrance of this strait is 4 miles wide, and quite clear, with soundings of 16 fathoms and under. The tide sets strong through the narrow part, causing broken water on the edge of the flat, when setting against the wind.

Native vessels anchor on this flat, 2 or 3 miles to the westward of Chíru point, where there is indifferent shelter in easterly winds ; this anchorage is called Bander Mansúri.

**Machahí**, a small village on the coast, 12 miles north-westward of Chíru point, is under Kalat al Abeid.

**Jazza**, a small village, nearly a mile north-westward of Machahí is under Nakhílu ; both these hamlets have towers, and a few trees near them. The inhabitants are fishermen.

The anchorage off them is open to the prevailing winds ; the depths are 20 fathoms at 2 miles off shore, thence decreasing, apparently regularly, to the coast.

**NAKHÍLU POINT**, which has high sand-hills just to northward of it, is a broad point, at which the coast changes its direction to N.  $\frac{1}{2}$  W. for 8 miles, forming the east side of a large bay. The ranges of mountains, extending along shore all the way from Cháarak, end here in low hills a short distance from the sea ; the east side of the bay is low, being opposite the mouth of the great valley, already mentioned, behind the Chíru coast range. This point is safe to approach by the lead ; 10 fathoms are about one mile off shore, the water deepening to 20 fathoms in mid-channel of the strait between this point and Shitwár.

**Nakhílu**, or Nakhíla, a small town in the bay, 3 miles northward of the point, has a fort with a tower at each end, and a large grove of date and other trees. It contains 200 to 300 men of the al Jowásim tribe ; with its dependency, the large island of Shaikh Shuaib, this place is under the shaikh of Cháarak.

The anchorage off this town, as anywhere on the east side of this bay, is well sheltered in easterly winds, but open to the shamál.\*

**Magám**, a small village with a few trees, is situated near the bottom of the bay,  $4\frac{1}{2}$  miles to northward of Nakhílu. The soundings off both these places appear regular, and there is no danger on the coast, which runs nearly straight from Magám as far as Nakhílu point.

**BANDER BISAITIN** is the name given to that part of the bay to the north-westward of Magám, from which place the coast bends round gradually, forming a little point, which is the west extreme of the bay, at  $5\frac{1}{2}$  miles W. by N. from it. It is low, and projects from the rocky hills, which come close to the sea to the west of it; there are some water cisterns near this point, and a small spit extends half a mile off it.

**Anchorage.**—Vessels can anchor about half a mile to the eastward of the point, sheltered from the shamál, and other prevailing winds. Small vessels anchoring close in might bring this point about West. Ten fathoms are a mile off it, and the anchorage should be as close in as possible, in order to obtain the best shelter in a shamál, which here blows W. by N. to W.N.W.

**The COAST.**—From Bisaitín the coast runs W. by N.  $\frac{3}{4}$  N. for 33 miles, nearly straight, thence trending to N.W.  $\frac{1}{4}$  N. for 17 miles to Ras Náband.

**Mountains.**—The great range, on which Jebel Turanja stands, stretching in a westerly direction, approaches the sea near Magám, forming the north side of the great valley behind Nakhílu; it continues along the coast, decreasing in height, and ends at Ras Náband in low hills. At 7 miles N.E.  $\frac{1}{2}$  N. of Nakhílu is a step or fall on the summit, the only part at all remarkable. Behind this coast range are seen the tops of a second range, running parallel to the coast, at about 12 miles inland; this is 4,000 to 5,000 feet high, and there is another great valley between it and the coast range.

**SHAIKH SHUAIB**,† a long island, lying nearly parallel to the coast extends 13 miles in a W. by N. and E. by S. direction, its greatest width being  $2\frac{1}{2}$  miles. The observation spot, at the centre of east end, is in lat.  $26^{\circ} 47' 40''$  N. and long.  $53^{\circ} 23' 16''$ . It is of brown colour, and level outline, similar in appearance to Kais, and

\* In maps of Persia, the mouth of a river (or watercourse?), to which the name of Darabin river is given, is shown in this bay; the position of its mouth is not determined.

† Commonly called by the Arabs Jezírat ash Shaikh.

risers gradually to a height of 120 feet in the centre, the east and west points being low plains for one to 2 miles from the extreme ends. It has one large round tree on the summit,  $5\frac{1}{2}$  miles from the west end, visible 18 miles, and conspicuous, except when close to the island; and a second, on a small bluff at the end of the high part,  $2\frac{1}{2}$  miles S.E. by E. of the west point. This island has ten little villages on it; the inhabitants are fishermen, and some cultivation is carried on; they also send 25 boats to the pearl fishery; the whole population is about 500 men. Small supplies of cattle, vegetables, and fruit may be obtained at the principal villages; water uncertain.

From the south-east point of Shaikh Shuaib, which is of cliff about 20 feet high, the south coast runs W.  $\frac{1}{2}$  S.  $4\frac{3}{4}$  miles to the village of Gorat or Korat, which stands on the southernmost part of the island; it has a tower and large grove of date and other trees, and contains about 100 men.\* There are eight or nine large round trees on the shore just eastward of it. Gorat point is sandy, to the east of it is a small bay, and at  $1\frac{1}{2}$  miles from the east end, a point of low cliff. To the westward of Gorat the coast is nearly all rocky cliff, and trends gradually to W.N.W. and N.W. by W. to the West point, which is rocky, and 6 to 10 feet above the sea. One mile East of this point is the hamlet of Ras, with a round tower and a few trees, containing about 40 men; and a mile South of Ras is another small place called Hilla. From the West point, the coast, all of low cliff, runs E. by N. and East for 2 miles, at which point there is a small bight, affording good landing for boats; it then turns to E. by S. and E.S.E. to the east point. The north coast is all of cliff, with one or two little sandy bights; at 4 miles from the north-east point is a small village with a tower, called Laza, and one mile west of this, another called Daku, without any trees at either, and containing each 30 to 40 men. At the former of these places the coast projects, forming a slight bay to the westward of it.

**Laz**, the principal village on the island, stands on a small rocky point on the north coast, nearly a mile from the east end; it has a high square tower, and contains about 150 men; there are many large round trees and a few date-palms, in some cultivated land between this place and the south coast. The east point is a low sandy spit, a third of a mile N.N.E. of the south-east point.

In the centre of the island is a valley running about 5 miles East and West, which is cultivated in parts, with many trees, and containing four villages, which have each from 30 to 50 men.

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\* See Admiralty plan on chart No. 2,837b,

The island is quite free from danger beyond 2 or 3 cables; off the west end a flat extends for a mile, with 4 to 6 fathoms on it, deepening to 10 about 3 miles W.N.W. of the island; on either side of this, 30 fathoms are close-to: the south side is clear of reef to about a cable, and 40 fathoms are only a mile off. The north side has a small reef all along it, from one to 2 cables off shore, thence deepening quickly to 18 fathoms at about a mile off. At 2 miles West of Laz village, a spit runs off about a quarter of a mile, and off that village the flat extends  $1\frac{1}{2}$  cables; 20 fathoms being 2 miles off shore. A narrow spit runs north-eastward from the low east point, having 2 fathoms on it for half a mile from the shore; thence deepening off gradually. From Gorat to the east end, the reef extends 2 cables off, outside which the water deepens to 30 fathoms at 2 miles distance.

**Shitwár**, a low islet lying off the east end of Shaikh Shuaib on an E. by S. bearing, is one mile long East and West, and half a mile broad, the strait between being three-quarters of a mile wide, and clear, with 3 to  $3\frac{1}{2}$  fathoms in it. The islet has small spits off its points, nowhere more than  $1\frac{1}{2}$  cables in extent; 20 fathoms are about  $1\frac{1}{2}$  miles off it to the eastward. Shitwár has small sand-hills, and is overgrown with brushwood, but is quite barren; there are some ruined water cisterns near its east end: its centre bears N.W. by W.  $\frac{1}{4}$  W. from the centre of Hindarābi.

**ANCHORAGE.**—In south-easterly winds a vessel might anchor off Ras village in 8 fathoms, sand, half a mile off shore, and well sheltered, but would have to weigh on the approach of a shamāl, which blows about W.N.W.; there is no shelter from this wind anywhere on the north coast, west of Laz; at which place, by anchoring in 4 fathoms close in, she would be partly sheltered by the point and spit to the westward of that place, and would be partially, at least, sheltered from south-easters by Shitwár island. On the south side there is, practically, no anchorage west of Gorat; from that place as far as Shitwár, is excellent shelter in a shamāl in 8 fathoms, quarter to half a mile off shore; but quite exposed to the south-easter in winter. For a vessel not drawing more than 13 feet, Shitwár strait is a good but very narrow anchorage; it is easiest entered from the south side; anchor in 3 fathoms, sand and rock, rather over on the western side, with Laz tower seen over the low east point; this anchorage is quite sheltered from the shamāl, and to some extent so from easterly winds.

**The Strait** between this island and the main is 12 miles broad, except between Nakhilu point and the east end, and quite clear of



danger. The tide is felt all across the strait, and sets strong between the two islands, causing a ripple on the spit off the east point; it is also felt near the south coast of the island. The deepest water in the strait, which varies from 18 and 20 fathoms to 25 fathoms at the east end, is at about 3 miles from the island, and thence decreases regularly towards it; soundings of 15 to 18 fathoms being carried quite across till about 2 miles from the mainland.

**A Bank.**—In lat.  $26^{\circ} 45' N.$ , long.  $53^{\circ} 29' E.$ , a 9-fathoms bank is reported, apparently of hard sand, extending S.S.E. and N.N.W. for about a mile, and  $3\frac{1}{2}$  miles E.S.E. from Shitwár.

**DIRECTIONS.**—This island and Hindarábi, owing to their level outline and brown colour, are exceedingly difficult to see by night, or in hazy weather; the water near Shaikh Shuaib is very clear, the bottom has been seen in 6 fathoms very distinctly. The lead is of little use approaching the island from seaward, especially west of Gorat; in the strait, a vessel working through may tack half a mile off the island, or by the lead, if kept going quickly, in 10 fathoms; on the main also, the lead is a guide only if going quickly; as 15 fathoms are under  $1\frac{1}{2}$  miles off shore in places, she should not come under 12 fathoms. Off Nakhilu point the soundings are bolder, and it is recommended not to come under 15 fathoms.

**Stiffe bank.**—At 22 miles S.S.W. from Shaikh Shuaib is a 15-fathoms bank, 2 miles in extent, with 30 to 40 fathoms water close to all round it. In lat.  $26^{\circ} 45' N.$ , and long.  $52^{\circ} 30' E.$  is another bank with 14 fathoms or perhaps less, and 4 to 5 miles in extent; it is W. by S. 35 miles from the west end of the island. These may be useful to indicate a ship's position.

**The SHAH ALLUM SHOAL,\*** least water 15 feet, is a dangerous patch in the middle of the gulf, nearly equidistant from the islands Shaikh Shuaib and Halúl, and from the Persian coast below Ras Náband. Its shoalest part bears S.W. by W. 43 miles from the west end of Shaikh Shuaib island. The extent of the ground with soundings of less than 20 fathoms is under  $2\frac{1}{2}$  miles North and South, by 2 miles broad; the dangerous part at the north end is one-third of a mile across; the soundings on this part are 4 and 5 fathoms, but one rock has only 15 feet on it at low springs;

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\* So named from the ship *Shah Allum*, which vessel was in  $3\frac{1}{2}$  fathoms on it in April 1857. In September 1858 the *Flatworth* struck on it, just after her commander had observed the sun's mer. alt., and from him its position was obtained nearly.

bottom lumps of rock. It is steep-to all round, having 37 to 45 fathoms about a mile off. This shoal does not cause any discolouration of the water, and is not seen from aloft till on it, when the bottom is seen in 7 fathoms; some white birds are generally hovering over it. The high land of the Persian coast between Nakhílu and Aslu is seen from it in clear weather, but is nearly down when on the shoal, so that if the mountains were high up above the horizon, a vessel could not be near this danger. Jebel Siri Yafál bears from it N.  $\frac{1}{2}$  E.

Twenty miles North of the Shah Allum is a small bank with not less than 17 fathoms on it, bottom sand and shells, and  $2\frac{1}{2}$  miles in diameter.

**Shíwu** is a village on the coast, north a little westerly, from the west point of Shaikh Shuaib, and 14 miles N.W. by W.  $\frac{1}{2}$  W. from the west point of Bander Bisaitín. It has a fort and a high tower on a little hill behind the village, about 120 feet high, and there are three large banyan trees among the houses; the highest tower on the hill behind it is visible 14 miles. Half a mile south-eastward of the village is a peaked hill 200 to 300 feet high, on a little coast ridge; behind which is a small valley running parallel to the coast, at the foot of the mountains, which are here about a mile from the shore. The village contains now 100 men, but was formerly more considerable, as most of the houses are deserted. A large flat black rock, projecting in front of the village, forms a small boat harbour, where the best landing place is, and the few boats belonging to the village are hauled up. To the west of this the shore forms a sandy bay a mile in breadth, but shallow, in which, and  $4\frac{1}{2}$  cables W.N.W. of the flat rock, is a small rock above water.

**Supplies.**—Cattle can be obtained here; also water of good quality from wells close to the beach at the west end of the village, but not in very large quantities, and only in your own casks.

**The anchorage** off Shíwu is tolerably sheltered in a shamál, if close in, but there would be considerable swell; anchor in 5 fathoms, opposite the black rock, about a quarter of a mile off shore; bottom, sand. At one mile off shore the depth is 15 fathoms.

At  $2\frac{1}{2}$  miles W. by N.  $\frac{3}{4}$  N. of Shíwu is a rocky point, with hills coming close down to it, to the eastward of which is a bay called Bander Kallátu, which affords good shelter to small native vessels in a shamál, as they can bring the point about W.S.W. There is better shelter for a vessel here than at Shíwu, by anchoring about a quarter of a mile off the point, and as far into the bay as possible.

**The COAST.**—From Shíwu the coast runs nearly straight to the west point of Bander Bisaitín ; with a small ridge of precipitous hills 200 to 300 feet high, close to the sea, nearly continuous : and, as at Shíwu, separated by the great range by a narrow valley. At  $2\frac{1}{2}$  miles E. by S.  $\frac{3}{4}$  S. of Shíwu is a somewhat remarkable saddle hill on this coast ridge, about 400 feet high.

Beyond Shíwu the coast has an average direction of W. by N.  $\frac{1}{2}$  N. for 19 miles, with hills rising everywhere close to the sea coast, which is mostly cliff, with little sandy bays. Along this part are many boat anchorages sheltered from the shamál, to the westward of Bander Kallátu, each of which has a name : they are quite close to the shore, which is deep-to, there being 25 fathoms at about a mile off.

**Sháhin Kuh** is a remarkable long flat-topped hill, with precipitous sides, and sloping on top slightly to the northward : its southern bluff is elevated 1,100 feet ; it is visible 30 miles, and is 8 miles to the west-north-westward of Shíwu, and about a mile from the coast.

**RAS NÁBAND** is a broad projecting cape, having on its north side an extensive bay. The point is a rocky cliff only about 10 feet high, the land rising gradually from it to the south-eastward. Half a mile inland of it is a large date grove, and at 3 miles S.E.  $\frac{1}{2}$  E. from the extreme point, is a single tree on some high table land, conspicuous from seaward. From this point the coast has a direction about S.E.  $\frac{1}{4}$  E. for 17 miles, and is bold and rocky, with low cliffs, and no anchorage ; it then trends to E. by S.  $\frac{1}{2}$  S. towards Shíwu ; there is no village on the coast between Ras Náband and Shíwu.

The soundings outside the cape are 30 fathoms at 3 miles distance, thence decreasing regularly ; there is no reef at the extreme point, or off the coast below it as far as Sháhin Kuh, beyond a cable's length.

**The Tide** stream is hardly perceptible off Ras Náband, or as far as Shíwu to the southward, and to the northward until near Ras Mutáf. In Náband bay a slight tide stream is experienced which appears to set round the bay.

**ASPECT of the COAST.**—The coast from Ras Náband to Kangún is clear of danger, and deep-to ; there is a range of mountains close to the shore along the whole extent, running in a N.W. and S.E. direction, the south face of which appears precipitous : fires are sometimes seen high up these mountains by night, made by charcoal burners. On the north side of Náband bay, the foot of the

great mountains is 2 miles from the shore ; it is a continuation of the range lying north of the valley behind the Asbán coast.

**Siri Yafál\*** is a well-known landmark on the summit of this range of mountains. It is 5 miles from the coast above Aslú, and bears N. by E. from Ras Náband. It is 4,870 feet high, and shows as a great step or fall on the summit, except from the westward, where it appears like a sharp notch : it is visible over 70 miles. On the same range, 23 miles S.E.  $\frac{1}{2}$  E. from it, is a bluff 3,600 feet high, which is conspicuous from the north-westward.

**Jebel Siri Ayenát†** is a barn-shaped peak on the summit of the great range,  $9\frac{1}{2}$  miles E. by S. of Kangún, and 5 miles from the nearest part of the coast : it is elevated 4,660 feet, and visible 70 miles. When close in to the coast, Siri is hidden by a lower range which stands between it and the shore, commences near Barak, and runs along shore past Kangún, increasing in height to the northward ; when out at sea, Siri is a most remarkable landmark. It stands on a long level-topped part of the range, which terminates in a great fall or step, 17 miles N.W., of this mountain. On an east bearing, Siri makes in a small peak.

**NÁBAND BAY** lies to northward of the cape, and is 4 miles broad by 5 to 6 in depth. The soundings in it are regular, shoaling from 10 fathoms at the entrance ; bottom, mud. About 2 miles S. by W. of Aslú town is a small rocky patch with  $3\frac{1}{2}$  fathoms least water on it, which is steep-to and does not show well.

From Ras Náband the coast has an E. by N. direction for 3 miles, thence turning to E. by S. for  $1\frac{1}{2}$  miles ; it then bends round to northward forming the bottom of the bay. About a mile eastward of the cape are the ruins of a large village called Kassád. A date plantation lines the coast from this place as far as the bottom of the bay. The south side of the bay is low and rocky, the land behind sloping up to a height of several hundred feet ; the bottom or east end of the bay is a low sandy shore, swampy in parts, at the mouth of the great valley already described as extending far to south-eastward behind the coast range ; it is very low and level for many miles from the sea, and the water off it is shallow, 3 fathoms being  $1\frac{1}{2}$  to 2 miles distant. A small river appears to have its mouth here. A few miles eastward of the bottom of this bay, is a pass into the interior, said to be easily practicable for carts.

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\* Known to English seamen as Aslu notch.

† Called often only Siri, and by English seamen Barn hill.

**Náband**, a small town with two round towers, in lat.  $27^{\circ} 23' 46''$  N., and Long.  $52^{\circ} 37' 19''$  E., standing within the bay  $2\frac{1}{2}$  miles from the point, contains about 250 men of the al Haram tribe. A reef extends off the town about half a mile, decreasing in width to one to  $1\frac{1}{2}$  cables off Ras Náband; the boats belonging to this place run over the reef, and anchor close to the town, in a little deeper water than that found on the edge of the reef. A ship can anchor with the village bearing S.E. to South, distant one mile, in 6 to 7 fathoms.

**Supplies.**—Good fish, cattle and vegetables may be obtained.

**Nakhl Hashin** is a small village,  $1\frac{1}{2}$  miles to eastward of Náband town: the point projecting between these places has a reef extending about half a mile off it, and boats anchor here close in, sheltered from the shamál.

Pearls are fished for off Ras Náband, the only place on the Persian coast where any are found, but none of much value are obtained.

**Bander Baid Khan.**—On the north coast of the bay N. by E.  $\frac{1}{2}$  E. from Náband town, is a sandy point, with a reef extending a cable off shore, and a small bay eastward of it, in which small vessels can anchor in a shamál; the coast between this point and the bottom of the bay, about 2 miles to the eastward, is low and swampy, and intersected by mangrove creeks. Indifferent water is obtained by digging in the sand on the point. This place is frequented by fishermen from Aslú, who take fish here in large seines, and keep a few boats hauled up on the point. At  $1\frac{3}{4}$  miles N.E.  $\frac{3}{4}$  N. from the point, is the village of Baid Khan, which lies nearly hidden in a grove of date and other trees; a little stream of good fresh water, brought down from a gorge in the mountains in a rude aqueduct, enables the people to carry on a considerable amount of cultivation. W.N.W.  $1\frac{1}{4}$  miles from the west point of Bander Baid Khan, the coast forms another low point, which may be considered the entrance of Náband bay; close westward of it, date groves begin, which extend past Aslú town; there is also a clump of dates, a quarter of a mile to north-eastward of it. The small bay between these points is clear, but off this point a reef runs a quarter of a mile. Here the coast alters its direction to N.W.

**Anchorage.**—A vessel, to be sheltered in Bander Baid Khan, from the shamál, which blows about W.N.W., would have to anchor in  $2\frac{3}{4}$  to  $2\frac{1}{2}$  fathoms at low water, with the edge of the little reef off the point about W.  $\frac{1}{2}$  N. Considerable swell from the westward is felt in this anchorage though sheltered from the wind and sea.

**Aslú**, a town on the coast, a mile north-westward of the point just described, is independent, and contains about 1,000 men of the al Haram tribe. It is a straggling place, occupying more than half a mile along the shore, with no fortifications visible from seaward, and has a large date grove behind it. No large baghalas belong to the place, but they have many small boats, and take a part in the pearl fishery. A short distance inland of this place are some ruins, consisting chiefly of mounds, but they have not been visited.

Opposite the town a reef extends more than half a mile off shore, with 5 and 6 fathoms close to its edge; inside this the water is a little deeper; small boats run over it and anchor in shelter close to the town; but the anchorage for a ship off the town is quite exposed to the shamál.

**Supplies.**—Cattle, &c., might be procured here.

**DIRECTIONS.**—The anchorage anywhere in Náband bay is sheltered in a kaus, but open to the shamál, and the heavy sea which rolls into the bay renders it almost impossible for a vessel to work out against one; small vessels would get some shelter in Bander Baid Khan, but a large one hardly any. The passage is about a mile in width between the  $3\frac{1}{2}$  fathoms bank and the Aslú reef, and 2 miles wide between it and the reef off Náband town; but this bank is not a danger for any vessels likely to enter the bay. The reef off Aslú should not be approached under 7 fathoms.

**Nakhl Takki** is a small village on the coast with a fort and tower, 2 miles N.W. of Aslú. There are some date trees near it, and two or three large round trees between these places. The shore reef here extends about a quarter of a mile off; and should not be approached under 8 fathoms, which would be very close. From this place as far as Táhiri, 20 fathoms are one mile off shore, or even less in places, the water deepening to 30 fathoms at 4 miles off; the bottom is mud. The soundings between this part of the coast and the edge of the pearl bank are irregular, 30 to 40 and 45 fathoms.

**Barak** is a small village and fort with a date grove 13 miles N.W. of Nakhl Takki; the intermediate coast is steep-to, with little or no reef off it, and is nearly straight; there are no villages between these places, and hills rise close to the sea. Boats are partly sheltered in a shamál, off this village, by the projecting point to the westward of it, which forms the east point of Táhiri bay.

**TAHIRI** is a village in a small bay  $3\frac{1}{4}$  miles W.N.W. of Barak; it is built partly on the shore and partly up the side of the nearest

range of hills, which are about 700 feet high, and come close down to the sea at the bottom of the bay. It may be known by a square fort on the hill side, about 100 feet above the sea, at the west end of the village, which is in lat.  $27^{\circ} 39' 36''$  N., and long.  $52^{\circ} 20' 11''$  E.; there is also a tower on the hills at the east end. It contains 200 to 300 men, all fishermen. The bay is formed by a low point projecting from the line of coast on either side of it, and is 2 miles across; there is an extensive date plantation and some cultivation on the east low point of the bay, and another grove a mile westward of the town, on the western point. The soundings in the bay are 8 fathoms at half a mile off, thence shoaling regularly; both the points are deep-to and clear of reef. On a small hill a mile W.N.W. of Táhiri fort are seen the ruins of a mosque.\*

**Supplies.**—Small supplies of cattle and vegetables can be obtained; water plentiful and good.

**Anchorage.**—By anchoring close in, in about 6 fathoms, the western point can be brought to bear W. by N., and a vessel would be sheltered in a shamál, but there is little or no shelter against the south-easter; the holding ground is good.

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\* At this place are the most considerable of the ruins on the coasts of the gulf, as far as is known to Europeans. From the present village for near 2 miles to the westward the ground is a mass of mounds and débris of buildings, of much better masonry than anything existing at present; the watercourses are walled in, and two narrow passes through the hills into the interior strongly fortified. At the mosque mentioned above, which is large, and has been a handsome building, are many grave stones, or sarcophagi, elaborately carved, with inscriptions in the Kufic character, also the remains of a Kanát, or subterraneous aqueduct. There are also many dry wells and ruinous reservoirs among the mounds. These are the ruins of an early Mohammedan city of great importance, doubtless the once famous city of Siráf; but on the hills behind this are remains of a different character. The whole hill side, for a space estimated at half a mile square, has been denuded of its superstratum of sand-stone, possibly for building purposes, leaving two or three isolated square pillars of rock, 10 to 12 feet high, in one of which, a chamber 7 feet by 4, is excavated, and divided into two compartments, evidently graves. The surface of the rock for many hundred feet round these is honeycombed into little cells, varying from 2 to 9 feet long, and 3 to 4 feet deep, with only thin partitions of the rock left between, and flights of steps, also cut in the rock, lead through them, up the steep hill side, to the wells, of which there are many, sunk to a great depth; one was 204 feet deep, with 36 feet of water in it, quite smoothly cut through the rock, and about  $1\frac{1}{2}$  by 3 feet across. In the precipitous faces of the hills around are many little chambers excavated, mostly inaccessible; some we could get at had been coated with cement inside, and contained bones almost dropping to dust. Former writers have supposed the once famous Siráf to have been situated on the coast of Lar, opposite Kais island, but there are no extensive ruins on that part of the coast: it will appear from the following that this is the site of that town. In Ebn Haukal's *Oriental Geography*, 10th century, translated by Sir W. Ousely, it is stated that Siráf is on the coast of Fars, and that fruits, &c., were brought from a mountain on the east of the city called Jem. We were informed at Táhiri that there was at present a place called Jam at one day's journey inland, through the mountains, which stood in a fertile district, producing grain, fruit, &c.

**Shílu** is a small village on the coast, with a tower in ruins in its centre, about 4 miles westward of Táhiri. The hills are close to the sea on either side of this place, and there are 20 fathoms within a mile of the shore.\* About 2 miles west of this place is a slightly projecting point called Ras Akhtar, to the westward of which is a bight where boats can anchor, sheltered by Ras Aswát, a small point to the westward ; both these points are deep-to.

**Ayenát**, a village about 9 miles to the south-eastward of Kangún, has a few trees interspersed amongst the houses. There is a small square tower and also date groves at either end of the village, and at the west end a large square house. There is tolerably good anchorage in a shamál in 10 fathoms ; a small reef of rocks off the village forms a boat harbour. At 3 miles westward of it is a small village called Mayalú, with a fort built on an elevation.

The coast between Táhiri and Kangún is moderately deep-to, and safe to approach to half a mile.

**KANGÚN (or Kangán)**, a large town standing at the bottom of the bay lying to eastward of Ras al Mutáf, and 18 miles N.W. by W. from Táhiri. There is a square fort in the centre of the town, which is visible for 10 or 12 miles. The chief is under the Persian Government, to whom he pays a yearly tribute ; and has under his authority all the towns from Barak to Shíwu, excepting Aslú. Many baghalas and boats belonged to the town, which was tolerably well built, and had large date plantations and much cultivation. In 1859 it was destroyed by the Dashti chief, with whom they had been long at feud ; the shaikh and his followers taking refuge on Shaikh Shuaib. It has since been re-occupied and re-built. At the town the beach is sandy, but at Ras al Marrar, the low south-east point of Kangún bay, distant 2 miles from the town, rocks extend about a cable off shore.

**Water.**—There is good water here in wells, and the usual supplies may be obtained.

**Anchorage.**—The bay affords shelter from the shamál, but some swell rolls in at W.S.W., the wind blowing at N.W. by W. ; about 10 miles farther to the westward the shelter is much better. There is no shelter whatever from the kaus ; the anchorage is in 5 fathoms, half to three-quarters of a mile off shore.

**KANGÚN to RAS AL KHAN.**—The coast line between these places projects considerably, and has shoals off one part of it, called Ras al Mutáf, to a distance of 8 miles.

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\* From this to the end of the paragraph is from Captain Brucks.



The mountain range, on which Jebel Siri stands, stretches inland to the north-westward, having a detached mass of mountains between it and the coast, of which Jebel Direng is the highest part. The range mentioned at Kangún, between the Siri range and the sea, is 2,000 to 3,000 feet high; at a distance it appears to form part of the back range, which, when close in, it rises above and hides; it is rugged and precipitous, with a very irregular outline.\*

The great fall in the level topped range of Jebel Siri, 17 miles north-westward of that peak, has been mentioned; at 8 and 11 miles north-west of this fall are two remarkable castle-shaped mountains with perpendicular sides, and projecting portions, like bastions; and at 23 miles N.W.  $\frac{1}{2}$  W. from it is a round-shaped mountain about 4,000 feet high, which glistens white in streaks, in the sun, from the salt contained in it; from this the range trends to northward towards Kuh Khormúj. A great valley separates these from the mountains next described.

**Jebel Direng**, 3,270 feet high, is at the northern end of the detached mountain mass already mentioned, standing on the projecting part of the coast. Direng makes in a mass of even height, with 3 to 5 hummocks on the top, according to the bearing; on a N.E. by N. bearing they are in one, and it appears as one peak, with a great bluff on the north side. There is an extensive plain to the northward of it. This mountain lies N.N.E.  $\frac{1}{4}$  E., easterly, from Mukhaila islet, from which the centre hummock is distant  $18\frac{1}{2}$  miles, and it is visible over 60 miles. This range decreases in height towards the south end; at 14 miles S. by E.  $\frac{1}{2}$  E. from the centre of Direng is a table hill near the south-west corner of the range, about 800 feet high, with a small natural pillar on it, called Funnel hill, useful as a mark when near the shoals. The range ends near the coast, about 8 miles westward of Kangún; this part of the coast is under the Dashti chief.

**DAYYIR** is a moderate sized town on the coast, presenting a clean appearance from the sea; it is  $7\frac{1}{2}$  miles W.  $\frac{1}{4}$  N. from Kangún, the shore between forming a slight bay. It contains 200 or 300 men, and has a square fort with two towers, and some round trees near it; to the eastward of it is a large date grove. The population is chiefly Persian and agricultural.

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\* In some of the passes through these mountains, ropes are made use of to surmount the most difficult parts; when these are hauled up, the passes are rendered quite inaccessible. Plastered visited some hot springs in this range opposite the town of Bardistán.—(Journal from Calcutta to Basra, &c., 1750.)

This place lies near the south-east end of Direng range, and the coast between this and Kangún is low and sandy, being opposite the mouth of the great valley above mentioned. A small reef extends one to 2 cables off at Dayyir, rendering landing difficult, unless the boats can get over it.

**Supplies.**—Water might be obtained here, and a few cattle, &c. ; some firewood could be got from the interior, by waiting a few days. Poultry are plentiful and good, but vegetables scarce.

**Anchorage.**—There is excellent anchorage here in a shamál, in 8 to 10 fathoms, half to one mile off shore, with muddy bottom ; it is a favourite place of shelter for baghalas during the summer shamáls, but in winter it would be quite open to the kaus. South of this place the water deepens to 27 fathoms at 5 miles distance, afterwards shoaling again to 9 or 10 fathoms on the tail of the Mutáf shoals.

**Tide.**—The tide runs during springs at the rate of one to 2 knots along shore.

**BARDISTÁN** is a town 3 or 4 miles to north-eastward of Dayyir, and 2 miles from the coast. It has a tall Bádgir or wind tower, and stands near a khor, which has its mouth 3 miles east of Dayyir, and in rains becomes a water course, draining the valley between Jebel Direng and the great range. Banak, a small village 3 or 4 miles to north-westward of Kangún, is under the chief of that place, Bardistán being under the Dashti chief.

**Auli**, called Danáji by the Arabs, is a village on the coast,  $2\frac{1}{2}$  miles to westward of Dayyir, with about 50 men. It stands on a small rocky point of low cliff, on which is a high round tower visible 10 or 11 miles. At one cable off Tower point lies a small ridge of rocks under water, inside which is a boat harbour, where the best landing is, on a little sandy beach close to eastward of the tower. The Direng hills come close down to the shore at this place, and for 7 or 8 miles to the westward of it ; there are few trees on this part.

**Water.**—There is good water here in springs.

**Anchorage.**—A vessel may anchor here in 6 or 8 fathoms, less than half a mile off shore.

**Batúna** is a small village of about 30 men, on the coast, 6 miles West of Auli ; there is a small white domed tomb on the hills above it. From this place there appears to be no village near the shore for about 45 miles, or as far as Láwar.

The **COAST**, west of this place, cannot be approached by shipping, owing to the extensive shoals off it; it has a westerly direction for about 10 miles. to a point called Ras Umm al Kuram, whence it runs N.W. by N. for about 35 miles farther to the village of Láwar. It is only approximately delineated, and skirts the west side of the Direng hills; the great plain to the north of those hills is very low and swampy.

**UMM AL KURAM** \* is a small low island, less than a mile in extent, lying about a mile off the point called after it. There is said to be a deep channel or gut, with 10 fathoms in it, between this island and the point. At 3 to 4 miles N.W. of it is another sandy low island called Umm Síla. Some date groves on this part of the coast can just be seen, when close in off Mukhaila island.

**MUKHAILA** or **UMM AN NAKHAILA**,† also called Umm Khíla, is a low islet, visible 6 or 7 miles, with two small date trees in the centre, and two-fifths of a mile across, lying 6 miles W. by S. from Ras Umm al Kuram, and at the north end of the Ras al Mutáf shoals. It is frequented by fishermen from Dayyir, and is a mark for the Mutáf shoal. The observation spot, at the trees, is in lat. 27° 49' 18" N., and long. 51° 28' 10" E.

**RAS AL MUTÁF**.‡—This great shoal extends to the south-east and eastward for 18 miles from Mukhaila; it appears to be composed of sand, with a rocky foundation, and is almost dry near its outer edge for many miles from that island, deepening gradually towards the tail. Its edge is one-third of a mile outside Mukhaila, and 6½ miles off the main, and to the south-eastward it increases to a distance of 8 miles off. Its south-western edge is the steepest 10 fathoms being within half a mile of it; by not coming under 12 fathoms, a vessel would keep about 6 miles clear of it. On the south side it is less steep, shoaling gradually from 10 fathoms, at 2 to 3 miles off; and off the east end or tail the water deepens off very gradually to 10 fathoms, at a distance of 7 miles from the 3-fathoms line, and thence quickly to 20 and 25 fathoms. Inside the shoal, a deep-water channel or khor runs up between Mukhaila and the main, with 6 and 7 fathoms, and continues for 7 miles beyond that island, but has no outlet. It is called Khor Ayaz, and is used by small native craft, which leave it by a channel with about 2 fathoms at high water, close to northward of Mukhaila. In-shore

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\* *i.e.*, the mother of mangroves.

This islet is said to have been formerly well planted with dates; on the old Portuguese charts it is called Palmeira. On it is the ruined tomb of a Mussulman shaikh, or saint, from whom it is sometimes called Shaikh Karáma.

† Called at one time by English seamen the Bardistán bank.

of this channel, shoal water extends 2 to 3 miles off shore, with another deep khor, leading up inside Umm al Kuram island. There is some reason to believe this shoal is extending to the southward.

**Anchorage.**—Vessels can anchor off the tail of this bank, quite sheltered from the shamál, in 4 or 5 fathoms, with Jebel Direng bearing N.N.W., or open to the right of Funnel hill, and Jebel Siri E. by N.  $\frac{1}{2}$  N. In the winter, it is not recommended to stand farther in behind the shoal than necessary to obtain shelter, as if a kaus came on, a sailing vessel might not be able to get out; the shamál here blows at N.W., so that when the outer edge of the shoal is brought W. by N., the sea is quite lost. As there is no good shelter from the shamál for a large vessel between this and Bushire, and it is a convenient and accessible place for anchorage, it may be advantageously resorted to by vessels caught in a N.W. gale near this part.

**DIRECTIONS.**—In working up the gulf, a vessel may stand close into the coast as far as Kangún, where she would get smoother water than outside; but near the tail of the Mutáf shoal, if she stood close in to the shore, she might, on the outshore tack, fetch up inside the shoal, and incur some risk; with Funnel hill N.N.W.  $\frac{1}{2}$  W., she would be close to the south-east end. On the south side of the shoal, the soundings are a good guide; or Jebel Siri, E. by N.  $\frac{1}{4}$  N., would be close to the edge. When Funnel hill bears N.N.E.  $\frac{1}{2}$  E., you are past the most projecting part, and from this as far as Mukhaila, 10 fathoms are close to the shoal. When Mukhaila island bears N.E. or when all the hummocks on Jebel Direng are in one, you are to the northward of the Mutáf shoal. In rounding the shoal, if a vessel does not come under 11 fathoms by day, or 12 fathoms by night, she will be at a safe distance. By day, the discolouration of the water is a good guide; it extends some miles off the tail of the shoal into deep water.

**Tides.**—The tides are strong in the channel behind the shoal, and also felt along its outer edge, setting along the coast and shoal.

At  $1\frac{3}{4}$  miles N.W.  $\frac{1}{2}$  N. from Mukhaila, is the south point of a narrow strip of low sandy shore, with tufts of grass on it, which runs in a N.W. by N. direction for 6 miles to Ras Jabrín. It is called Umm al Kassár island, and between it and Mukhaila is the boat channel, already alluded to, which is narrow, and runs close round the north end of the islet; native boats lie at the island till high water, before attempting the passage, which is much blocked up by dry sand-banks, and has not more than 2 fathoms at high water. Inside Umm al Kassár is an extensive swamp intersected by deep

khors, the mainland being about 5 miles distant ; this swamp continues to the northward, nearly to Láwar.

**RAS al KHAN**, the south end of a very low sandy ridge, almost submerged at high water, is 15 miles N.W. by N. from Mukhaila island ; it projects considerably from the line of coast, and is opposite a great valley 10 miles broad, lying to northward of Jebel Direng, and extending inland for near 20 miles to the great round salt mountain, already described. Inside this point are extensive swamps, with many creeks, the mainland not being in sight from it. It is, no doubt, the delta of the river whose mouth is now at Khor Ziyárat. In this valley lies the town of Burdekhún, the residence of the Dashti chief.

**Soundings.**—The soundings off this point are 10 fathoms at 2 miles distance, and to the northward of it, that depth is found at a mile from the dry sandy ridge ; to the southward of the point a small bay is formed, where native boats find indifferent shelter in a shamál, in 2 to 2½ fathoms. Between this point and Mukhaila, 10 fathoms are 2 miles off the low strip of sand forming the coast, which is clear of danger. The 20 fathoms line is 8 miles off Ras al Khan, and 10 to 12 miles off Ras al Mutáf, outside which it deepens quickly to 30 fathoms. The deepest water in this part of the gulf is 40 fathoms. A vessel should not come under 11 fathoms by day, or 14 by night, as the coast is so low as only to be seen 2 or 3 miles, even in the day-time.

**Caution** is therefore required in passing it.

**RAS AL KHAN to BUSHIRE.**—The shore is clear of danger, the soundings decreasing regularly ; it has an average direction of N. by W. ½ W. as far as Bushire peninsula, which projects considerably from the coast.

The tide stream is very weak on this part of the coast, and often quite imperceptible.

A range of mountains near the coast commences 9 miles northward of Ras al Khan, and runs to northward along it for 40 miles, when it sinks into the plain which lies inland of Bushire. It has a rugged outline ; and on it is the Bu Reyyál, or Asses Ears peak, which consists of two pinnacles close together on the summit of the range, with a third and smaller one on their north side. This peak, which is 2,500 feet high, and visible about 50 miles, is well known, and conspicuous when bearing N. by W. to S.E., beyond which bearings it is shut in with the rest of the range. There are other peaks on this range, two of which form a saddle or notch, when seen from Bushire ; they are just to northward of Bú Reyyál, and higher than that peak,

but when abreast of it, the saddle is less conspicuous, as it opens out in a long ridge.

**Kuh Khormúj\*** is a grand mountain ridge, 6,500 feet high, seen over all the coast ranges until close in to the shore, and to a distance of more than 80 miles. From the westward it makes in a long convex ridge, but when bearing E.S.E., the ridge is seen end on, and it forms a fine peak, with a long rounded slope on the north side. It is 22 miles from the coast just above the Bu Reyyál, and bears from that peak N.E. From Bushire it bears S.E. by E.  $\frac{3}{4}$  E., on which bearing its form is particularly remarkable. To the southward of it, the back range has a south-easterly direction, passing inland of the great salt mountain behind Jebel Direng.

**Khor Ziyárat** is a small creek, 7 miles to northward of Ras al Khan, entered by boats at high water, but the mouth is exposed. After rains, a large quantity of fresh water is discharged through it, it being the mouth of a river having a long course from near Shíraz; its banks at the mouth are low. The swampy coast, which extends from Mukhaila island, ends a little above this: and the Bu Reyyál hills come close down to the sea.

**Láwar** is a small village and fort on the coast, 17 miles to northward of Ras al Khan. Kogán is a similar village a mile northward of Láwar; there are large date groves at these villages and much cultivation.

**Báraki** is a small village with a tower, on the coast west of Bu Reyyál; the town is in lat.  $28^{\circ} 29' 0''$  N., and long.  $51^{\circ} 6' 22''$  E.; there are a few date trees here, and some cultivation on the narrow plain between the hills and the sea. It contains about 100 men, chiefly cultivators. A little to the southward of this place is a position called Samán, or the boundary, being the junction of the territories of the chiefs of Dashti and Tangistán. A mile northward of Báraki is a small fort and village.

**The coast** between this place and Ras al Khan is quite safe to approach by the lead; it is sandy, with little rocky points, and there is no shore reef beyond a cable off it; the plain between the hills and the sea is from one to 2 miles wide. Ten fathoms are 4 miles off shore at Báraki, and 3 miles off, just north of Ras al Khan, the 20 fathoms line being from 11 to 14 miles off shore as far as Bushire; the deepest water in this part of the gulf being from 30 to 35 fathoms.

From Báraki the coast runs N. by W. for 20 miles, to the bottom of Halíla bay; 6 miles northward of it is a single tree on a little cliff,

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\* So called from the town of that name near its foot.

rather conspicuous from seaward, and 2 miles North of this tree, are low cliffs extending some distance along the coast.

**Báshi** is a village with a large round tower and date grove, 11 miles to northward of Báraki. Here the Bu Reyyál range recedes from the sea, ending a few miles to the northward; the great plain inland of Bushire commencing near this place.

**Khor Khuweir** is a small creek about 9 miles northward of Báshi, dry at the entrance at low water; it is near the bottom of Halíla bay, a large and rather shallow bay, the shores of which are low and sandy, formed between the coast about Báshi and Ras Halíla, the south-west point of Bushire peninsula; near this khor is a small fort and date grove.

At 2 or 3 miles north-westward of Khor Khuweir is the entrance to a large creek draining the great swampy plain inland of Bushire. Dry sands extend about a quarter of a mile off its mouth, which is nearly dry at low water, and the soundings within the bay are all under 3 fathoms, that depth being 4 or 5 miles off shore at Khor Khuweir; the bottom is chiefly mud.

From this the coast line of the mainland runs about N. by W.; it is very low and ill defined, being, in rains, swampy for a considerable distance from the point reached by the tide; Bushire peninsula is separated from it by a large salt water swamp, called Mashíla. About 5 miles to northward of Khor Khuweir is the fort of Tangistán, the residence of the chief, which has many date trees round it, and the date groves are continuous from it for many miles to northward. This is the northern extremity of the Tangistáni chief's territory.

**RAS HALÍLA**,\* before mentioned, is a low point, with a rocky spit extending a third of a mile off south-westward. At two-thirds of a mile N.N.W. of the point, is the small village of Halíla, containing about 100 men; it has a large square tower, and some cultivation is carried on.

**Water.**—Good water is obtained in wells, about a mile to the eastward of the point, and not more than 80 yards from the beach, just behind the sandy ridge: the water is only 3 feet from the surface, and little above the sea level; it is better than any obtainable near Bushire for shipping. Close westward of the wells are clumps of date trees, extending across the peninsula.

**Anchorage.**—There is good anchorage for small vessels, with Ras Halíla bearing N.W. by N., or with the fort seen over the point, a

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\* See plan on Admiralty chart, No. 2,837*b*.

quarter to half a mile off shore, in 3 fathoms, and sheltered from the shamál, but open to the kaús.

**The COAST.**—From Halíla point the shore of the peninsula runs E.  $\frac{1}{2}$  S. for 5 miles to the creek, draining the swamp already mentioned; it forms a long narrow sandy spit, 5 or 6 feet above the sea, covered with tufts of coarse grass, and diminishing in breadth, from about a mile near the wells, to 50 yards at the extreme tip, having the great Mashíla, or swamp inside it.

To the northward of Ras Halíla the coast has a N.W. by N. direction for  $5\frac{1}{2}$  miles, to Ríshahr mounds; it is all rocky near the sea, and the shore reef extends about 2 cables off. There are two date clumps about a mile to northward of Halíla village, and the ground rises from that place to a table land in the centre of the peninsula; a domed tomb on the highest part, called Imam Záda, is elevated 150 feet, and is 5 miles S. by E. of Bushire. The dome has lately fallen in, and it is no longer so conspicuous as formerly. Above Halíla the table land ends abruptly towards the sea in cliffs. A large house, distant about half a mile to southward of the old dome, and the date trees to the eastward of Halíla point, are the first objects seen when approaching Bushire from the southward or westward.

**Telegraph.**—A small rocky point projects just to northward of the Ríshahr mounds (see page 276), forming a little bay with cliffs, on which the telegraph cable house stands. There is good landing in northerly winds at these rocks. The telegraph offices, fine large buildings, stand about three-quarters of a mile from the shore. If intending to anchor, a vessel should avoid the telegraph cables, of which there are three, and the cable house should not bear north of East. You will then be to the northward of the cables, and can anchor about a mile or less off shore in  $3\frac{1}{2}$  fathoms. Messages can be sent to all parts of the world.

**DIRECTIONS.**—The sea is quite clear after passing Ras al Mutáf. In working up the gulf, the low shore of Ras al Khan requires caution in passing or standing in towards it. On the off-shore tack, a vessel should not stand so far as to approach the islets Fársi and Arabi, the lead being no guide. The whole of the Persian mountains except Kuh Khormúj are out of sight from these islets, so that by keeping them well up in clear weather, a vessel would not get too near the islets. In hazy weather it would be especially desirable not to approach them, or to stand off more than 40 miles from the coast when abreast of them. The directions for making Bushire are given in the next chapter.

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## CHAPTER XI.

NORTH COAST OF PERSIAN GULF.—BUSHIRE TO THE  
SHATT AL ARAB.

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VARIATION,  $0^{\circ} 40'$ , West in 1890.

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**GENERAL OBSERVATIONS.**—There are ranges of mountains at some distance from the coast, as far as the delta of the great rivers, which is all low, with banks extending a great distance off. South of Dilam bay there is no danger on the coast. The Persian gulf shoals gradually towards the head, the deepest water opposite Bushire being 30 fathoms, and the depth decreases to the northward. The towns north of Bushire are all small, the population chiefly Persian. The tides are felt along the coast, and above Khárag, all across the sea; they increase in strength as the rivers are approached: the tide sets round the Persian coast along shore, as well as directly into their mouths from the southward.

The time of high water, at full and change, varies from 7h. 30m. at Bushire to about 12 hours at the bar of the Shatt al Arab river.

**The Mountains** near Bushire are very characteristic in their appearance: the remarkable landmark Kuh Khormúj has been already described: to the northward of it, and 27 miles east of Bushire, is a mountain ridge about 4,000 feet high, deeply furrowed, with a lump or knob on the summit at each end, and a third near the middle. Northward of this is another range, with a fall or step on the top, and a great bluff or fall on the northern end, 5,350 feet high, called Gisakán bluff;\* it is N.E.  $\frac{3}{4}$  E. 34 miles from Bushire. To the left of this bluff is seen, when at Bushire, the round top of a mountain, over 10,000 feet

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\* So called from the town of that name in its vicinity; the road to Shíraz from Bushire passes to northward of this.

high, on which snow lies for some months ; it is 41 miles north-eastward of the bluff. To the northward of Gisakán bluff, the range is more distant and appears much lower, stretching northward, and leaving a great plain between the mountains and the sea. From Bushire harbour are seen between the Gisakán bluff range, and the one south of it, a little Asses-ears, and a barn-topped hill, situated near each other on a range much farther inland. The Bu Reyyál range, which is visible to the southward, forms in a Saddle hill or great notch.

**BUSHIRE**, properly **ĀBU SHAHR**,\* the principal seaport of Persia, is a town of about 12,000 to 15,000 inhabitants, and occupies a low point of land, at the north end of the peninsula already mentioned, which is 11 miles in length from the town to Ras Halíla, by 3 miles broad in the centre. The town, which is  $1\frac{3}{4}$  miles in circumference, is poorly built, the only architectural feature being several high bádgers, or wind-towers. The streets are narrow and dirty, and there is no attempt at draining, paving of any kind, or lighting. It is defended on the land side by a wall with many towers, built across the isthmus, and a small outwork ; all of which defences are more or less ruinous. The British Residency is a large building near the south-west corner, with a flag-staff close to it ; the Dutch consul has also a flag-staff northward of the British Residency, the Turkish consul another to southward of it, and the Persian governor's residence is a square fort at the south-east corner, near the creek, at which is the Persian flag-staff. The highest part of the ground on which the town stands is a rocky ridge near the east side, which does not exceed 40 feet in height ; a large bádgir, which stands on this, is the highest building in the town, and its top is elevated 90 feet above the mean sea level. This may be seen at a distance of 10 miles, and, when coming from the northward, is visible before any other part of the town or low land. There are also a number of detached houses built on the peninsula from 2 to 4 miles from the walls, chiefly inhabited by the Europeans. This place is directly under the Persian government, who keep a garrison of sarbáz† and some field pieces here, and the governor is under the prince of Fars. The

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\* See Admiralty plan of Abu Shahr, No. 27 ; scale,  $m = 3$  inches : also plan on Admiralty chart, No. 2,837b.

The present town is probably less than 200 years old ; the E.I. Company abandoned their factory at Gombroon in 1761, and established one at this place shortly afterwards, which has, since the early part of this century, been a purely diplomatic establishment. This town was taken by the British army on 10th December 1856, and held by them till the conclusion of peace with Persia in 1857.

† Persian regular troops.

amount of duties levied on exports and imports from natives is variable, and sometimes certain articles are prohibited, and the regulations are arbitrary. Five per cent. is levied on all British goods. The Residency flag-staff is in latitude  $28^{\circ} 59' 7''$  N., and longitude  $50^{\circ} 49' 34''$  E. (observation point).

The population is chiefly a mixed race of Arab and Persian, that of the country round being almost exclusively Persian: some English merchants have established themselves, and a few Armenian merchants are settled here, and have a small Christian church in the town.\* It is the headquarters of the British Political Resident in the Persian gulf.

A considerable trade is carried on with Basra, India, Great Britain, Turkey, Egypt and European ports: the traffic with the interior being by caravans of mules, which are the only animals capable of getting over the passes. The distance to Shiraz is about 180 miles. The exports are grain, horses and cattle, carpets, dates, dried fruits, roses, rose water, drugs, gums, silk, wool, cotton, hides, seeds, tobacco. A large quantity of opium is sent via Bombay to China, paying a transit duty in India. The imports, oil, cotton twist and piece goods, woollen goods, timber, tea, sugar, indigo, hardware, arms, metals, coffee, drugs, spices, turmeric, glass and china, &c. Provisions, silk, and woollen goods are imported chiefly for re-export. The mail steam-vessels call here weekly on their way from India to Basra, and also on the return voyage; there is another line of steamers to India, as well as a number of steamers direct to European ports. Some large baghalas which trade with India belong to this port, and many smaller coasting vessels. Part of the commerce is carried on in baghalas from Kuweit and other ports in the gulf, and it is visited by a few European ships from Calcutta. Boats are not allowed to leave or arrive at the town wharves between sunset and daylight. The Bushire boats fly a red flag, with the two-bladed sword of Ali,† in white, in the centre of the field. A weekly postal service between this place and Teherán has been established by the Persians.

**Supplies** are easily obtained at a reasonable rate, as cattle, vegetables, fruit, and other articles required for a ship, excepting salt meat. The drinking water used in the town is brought from wells, at a distance of one to 3 miles to the southward, the most distant

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\* In this church are monuments to several English officers who fell in the Persian campaign of 1856-7.

† Called Zul Fikár.

being the best : the best water for ships is brought from Halíla bay, but the boats are sometimes detained by shamáls for one or two days; boats often fill up at the well near the trees South of Ras ash Shagháb, lying in a small bight in the shore reef.

There is always some government coal here, or some quantity might be bought from the agents of the mail steamers, who keep a supply here ; the supply of firewood is limited.

**The coast.**—The south-west tower of the town wall, now ruinous, stands on cliffs, 15 feet high, which begin opposite the Residency, and extend S. by W., half a mile from the town ; beyond these the coast is low and sandy as far as Ríshahr point, forming a broad point called Ras ash Shagháb, at  $3\frac{1}{2}$  miles S.S.W. of the town, which appears prominent from the northward or southward and may be known by a small clump of date trees half a mile South of it. There is a well of good water at these trees, close to the shore. Coming from the southward the town is first seen over this point, if the vessel is close in. Mufka, 2 miles from the town, is a small fishing village, between which and the Residency cliffs, the shore forms a sandy bay. A tower 40 feet high, intended for a lighthouse, has been built just to northward of the village, but no light is shown.

From Ras ash Shagháb the coast trends gradually S.S.E. for 2 miles to Ríshahr point, which is of low cliff, the north point of a small bay, having cliffs all round. On these are the mounds of Ríshahr fort,\* which are 80 to 90 feet above the sea, and enclose a quadrangular space about 300 yards across.

Imam Záda tomb or mosque, which had a white dome, now fallen in, 154 feet above the sea, stands in a little village, on the highest part of the peninsula, about a mile E. by N. of Ríshahr fort. A large

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\* These are undoubtedly very ancient, probably contemporary with Babylon, from the fact that bricks with the cuneiform character are found in a mound, 2 miles to the eastward, which forms part of the remains. Sir W. Ousely says that the Persian geographer, Hamdalla Cazvíni, who wrote in the 14th century, dates its foundation above 500 B.C. The mounds above mentioned are very remarkable, and were probably a citadel; they are 20 to 30 feet above the ground, and surrounded by a broad, and still deep, ditch, on the three sides towards the land; the fourth, towards the sea, is open. The country for a mile or more round this is a series of heaps or mounds, probably remains of the city which must have existed here. Earthen urns, containing human remains, have been dug up in the neighbourhood, but without inscriptions. The mound where the inscriptions are found is about 30 feet high, and on being dug into from the top a short distance, the bricks are found regularly laid in courses. Before the establishment of Bushire, there was a large Muhammadan town here. extensive graveyards still existing, with dates on the tombs from 100 to 200 years ago ; the modern village of Ríshahr is insignificant. On Dec. 9th 1856, this strong position was taken by assault, with some loss, by the English army advancing on Bushire: the mounds were occupied by about 800 matchlockmen of the Tangistáni tribe.

house has been built half a mile to the southward of the tomb, which is seen before the mosque, when approaching from seaward, and is visible 13 miles. The mosque is now difficult to distinguish. Outside the walls of Bushire, the ground is swampy, and sometimes overflowed at extraordinary high tides, for upwards of a mile to the southward, excepting a narrow strip along the west coast. It thence rises in a gradual slope to Imam Zâda village, and is partially cultivated, with several small hamlets, clumps of date and other trees, and many wells. To the southward of Imam Zâda the land is very rugged and broken as far as Halîla, the high ground ending on all sides in little cliffs. Very fine grapes grow on the rocky ground about Imam Zâda. In spring the wild flowers are noteworthy.

The east coast of the peninsula runs in a curve for  $1\frac{1}{2}$  miles to Ras Fûdar, which bears S.E.  $\frac{1}{2}$  E. from the town, and is about 30 feet high with a few date trees on it; between it and the town the land is swampy. From Fûdar the edge of the swamp or mashîla, which separates the peninsula from the main runs S.S.E. for nearly 5 miles to a low point, with groves of date trees, and cultivation all along the low belt formed between the swamp and the rising ground near Iman Zâda. Opposite this point is the highest and driest part of the mashîla, and therefore the best place to cross to the mainland; but in dry weather, or at neaps, the caravans cross it a mile or more to the northward. Just below this point is a small fort and village called Tangak, from which the edge of the swamp runs to southward behind Halîla bay.

The breadth of the mashîla is 3 to 4 miles, between this part of the peninsula and the mainland, which is very low for many miles from the edge of the swamp, and beyond the harbour to the northward. The breadth varies according to the tides and rainfall.

To north-eastward of Fûdar, and separated from it by the creek, is a large swampy island called Maharrak, which has some fishermen's huts on its west end a third of a mile distant from Fûdar point; it extends thence upwards of  $1\frac{1}{2}$  miles east-north-eastward, and is partly overflowed at high springs, being nowhere more than 3 to 4 feet above the sea.

**Jezîrat Shaikh Saad\*** is a low island, 4 miles long North and South, lying on the east side of the harbour. It has a large village and a small tower at its north end; the latter bears N.N.E.  $5\frac{1}{2}$  miles from

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\* Called by the Bushire boatmen merely Jezîra, or the island; near the tower is the ruined tomb of the Shaikh, whose name it bears; and to the eastward of this are remains of Bandergá, a town of some antiquity, consisting of extensive mounds and ancient tombs.

the Residency flag-staff, stands on the north point, which is rocky, and about 10 feet above the sea, being the highest part of the island. The village has many large boats belonging to it, and is inhabited by boatmen, who carry on the traffic between Bushire and Shif: a small creek running into the island divides the village into two parts. There is no water here except after rains; in the summer it has to be brought from Bushire. At  $2\frac{1}{2}$  miles south of this tower are two date trees; these and the tower are useful as marks in the harbour. The west coast of the island is sandy, with rocky patches, and the whole island is swampy, except a narrow strip along its northern and western sides: the south end is separated from Maharrak by a channel nearly dry at low water, and half a mile broad.

**Shif** is a low rocky point of the mainland,  $1\frac{1}{2}$  miles east of the tower on Shaik Saad; it is 10 to 15 feet high, and is the only landing place on the main near Bushire. A small house and rain-water cistern have been erected here. Many of the supplies from the interior are brought down to this point, and shipped thence for that town, thereby saving the long circuit by the muddy mashíla. It is only 32 miles to Borasján against 48 by the land route. Inland of Shif the country is low, barren, and partly swampy for some miles, and to the northward of it are extensive swamps as far as Rúhilla.

**RAS ASH SHATT**, the point which, with the banks off it, forms the shelter to Bushire harbour against the shamál, bears N.W.  $\frac{3}{4}$  W. 10 miles from the Residency, and is sandy and very low, hardly above the sea level; it is a narrow strip of sand, and inside it is an extensive swamp intersected by numerous creeks, extending for many miles inland, and to the eastward beyond Shif. All these creeks have deep water inside, but only 2 to 3 feet at the entrance.

**BUSHIRE HARBOUR**.—The harbour, called by the Arabs Khor Deira, is a belt of deep water between Rakat as Sáfi or “the Inner bank,” which extends off the town, and “the Outer bank” or Rakat al Aali, extending southward from Ras ash Shatt.

**APPROACHES to the HARBOUR**.—From Ras Halíla to Shagháb point, a rocky reef fronts the coast to a distance of one to  $2\frac{1}{2}$  cables, being most extensive at the latter place, where also 3 fathoms are very near its edge; while to the southward the 3-fathoms line is about a mile off shore. Outside this the depth increases regularly, 6 fathoms being  $2\frac{1}{2}$  miles off. Twenty fathoms are 10 to 11 miles off shore from Ras Halíla as far as Ras ash Shatt.

The above rocky shore reef ends\* in the bay, about a mile south of the town; it projects furthest just above Mufka, being there a quarter of a mile off shore; a little boat harbour being formed inside it, opposite that village. At half tide lumps of rock uncover along the edge of this reef.

Ras ash Shatt has 10 fathoms at 3 miles off, thence shoaling regularly to 2 fathoms half a mile off shore. From this point the edge of the Outer bank runs south-eastward till opposite Bushire, and forms a long narrow tail or spit, running North and South: with 12 feet water on it for a length of  $1\frac{1}{2}$  miles, from where the Residency flag-staff bears E. by S., to its southern tip, from which the flag-staff bears E.N.E., distant  $2\frac{3}{4}$  miles. The water shoals gradually from 12 feet towards the main to 9 feet with the flag-staff bearing S.E. by E., and so on to the dry banks E.S.E. of Ras ash Shatt. Under 9 feet it is hard sand; towards the southern end the bottom is mixed with mud, and becomes softer until it is nearly as soft as the mud on either side. Outside it the water shoals regularly up to the shoalest part, which is only 2 to 3 cables broad; 4 fathoms are one mile off: bottom soft mud. When on the shoalest part, Ras ash Shagháb bears S.S.E.  $\frac{1}{4}$  E.

**The anchorage**, or Outer road, is in 4 fathoms just outside this bank, with the town bearing E. by N. It is used by vessels of too large a draught to enter the Inner road: on this bearing boats can easily fetch off with the prevailing winds.

**Draught of vessels.**—The greatest draught of any vessel brought into the Inner road during the war was  $19\frac{1}{2}$  feet, and this only at springs. A vessel drawing more than 13 feet must wait for high water. The anchorage in the outer road is quite exposed both to the shamál and sharki.

A small steam vessel can anchor in fine weather about one mile S.W. from the Residency, in 13 feet, lowest spring tides; soft bottom. This is convenient if only making a short stay. Boats can thence land easily under the Residency.

**The Inner bank** consists of a series of dry sand-banks, lying off the north end of the town. Its outer edge, which commences just above the Residency, runs N.W. by N. for  $2\frac{1}{2}$  miles from the flag-staff. There are several boat channels through it, used at high water by boats entering or leaving the creek for the Outer road. The north-west point of these shoals, called Ras al Marg, is the chief danger

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\* Between this and the little cliffs outside the town is a sandy beach clear of rocks, in which most of the stores for the British army were landed, on their first arrival in Dec. 1856.

entering the harbour, being a lee shore in a shamál, and steep-to: the deepest water in the harbour is close to its edge. It is the west end of a long narrow sand-bank, dry at low water, which runs in a slight curve in an E.  $\frac{1}{2}$  N. direction for  $1\frac{1}{2}$  miles. This bank, which is on the south side of the anchorage, is called Lakfa.

**Entrance channel.**—From Ras al Marg a flat with 2 fathoms and under at low water extends in a south direction outside the dry part of the Inner bank until past the town: opposite the Residency it extends  $1\frac{1}{4}$  miles off shore. The entrance channel, between this and the Outer bank, is one mile wide; it has only 14 feet at low-water springs, with the Residency bearing East to E. by N., but deepens to the northward; and with the flag-staff E.S.E. there are  $2\frac{1}{2}$  fathoms in it. To the southward of the Outer bank there is a sort of continuation of it, with  $2\frac{1}{2}$  to 3 fathoms, extending as far as Shagháb, having half a fathom more water inside. The bottom is everywhere soft mud.

**Khor Deira**, by the English called the Inner road,\* is the name given to that part where large vessels anchor; the soundings are 3 to 4 fathoms at low water, over muddy bottom; it lies close outside Lakfa bank, and with the town bearing from S.E. by E. to S. by E. is only half a mile wide, having on its north side the shoal water extending off the dry banks to the eastward of Ras ash Shatt. The deepest water is close to the Lakfa bank, on which the lead is no guide; on the north side the water shoals regularly, but quickly; the banks are hard sand, so that if working it is advisable to go about on getting a hard cast, or in a large ship to do so immediately the water shoals, and before getting a hard cast.

The anchorage is the better sheltered in a shamál the farther you are in to the eastward, and also the easier it will be for boats to fetch the ship from the town: a large ship should anchor with the flag-staff S. by E.  $\frac{1}{4}$  E., in 3 to  $3\frac{1}{2}$  fathoms,  $2\frac{1}{2}$  miles from the town, and a quarter of a mile from the edge of Lakfa bank, so that she may have room to veer cable in a shamál. A small vessel might bring the flag-staff S.  $\frac{1}{2}$  E., and anchor in  $2\frac{1}{2}$  fathoms, just outside the baghalas, half a mile eastward of the berth for large vessels, and opposite a small boat passage through Lakfa bank; this is a very convenient berth. Opposite the east end of the Lakfa, which is called Ras al Jábri, there are only  $1\frac{1}{2}$  fathoms in the harbour, and thence the depth decreases towards Shaikh Saad. The holding ground is everywhere very good in this anchorage.

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\* During the war there were 40 to 50 large ships lying in the Inner road at one time.



**Khor Sultáni** is the name given to a large creek with a shallow bar, by which boats of light draught run up to the wharves at the town. It passes close along the east side of the town, where it is 2 cables broad, and has 4 to 6 fathoms, hard bottom ; and thence runs south-eastward between Fúdar\* and Maharrak, where it splits into two branches, of which the principal runs north-eastward behind Maharrak and Shaikh Saad islands.

On the east side of Khor Sultáni, a rocky bank extends from Maharrak island for  $2\frac{1}{3}$  miles north-westward, ending in a point one mile north of the town ; the part northward and eastward of the town is called Alafdán. Abreast the north end of this, the creek is half a mile broad, and has only a fathom in it at low water, and to the northward the channel spreads out into a great flat, with mostly hard bottom, lying between this shoal and Lakfa bank, with depths of 3 to 4 feet at low water. There are two entrances to Khor Sultáni across this flat, one just south of Ras al Marg, called Khor Bahráni, only used by small boats, as the entrance is exposed ; the other, between Ras al Jábri and the Alafdán. Through this latter, large baghalas drawing 10 feet, are brought into the creek to be laid up, being first cleared out of everything. The shoalest water is just north of Alafdán, where there are only 11 to  $11\frac{1}{2}$  feet, hard bottom, at high water springs. Boats of 7 to 8 feet draught can get in at any high water.† The light draught gunboats frequently enter, and anchor near the town.

Small native vessels anchor with Ras al Jábri West to N.W. in 6 feet at low water ; this anchorage is called Bander al Gháwi.

**Khor Bandargá**, a large creek, by which Shif is approached, runs close round the north end of Shaikh Saad, and has 5 to 8 fathoms in it opposite the tower ; it then turns south-eastward behind the island, passing a third of a mile westward of Shif point : at high water, the Shif boats pass inside Shaikh Saad in bad weather, and thence down the creek south of Maharrak island to Fúdar. The bar of Bandargá creek,  $1\frac{1}{4}$  miles west of the tower, has only 3 feet

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\* The surveying brig *Euphrates*, during the Persian campaign, was brought into Khor Sultáni, drawing  $10\frac{1}{2}$  feet, and stationed half a mile S.E. of Ras Fúdar in the southern branch of this creek, to assist in the defence of the British camp if required.

† The marks for entering are not easily made out by a stranger ; the pilots will take vessels of the above draught in. A rocky spit extends a quarter of a mile to south-eastward of Ras al Jábri, which a vessel may haul round, when all the cliffs near the Residency are shut in behind the town ; when to the southward of this spit, the two date trees on Shaikh Saad will bear E. by N. ; then haul up to W. by S. until the date trees (about a dozen) on Fúdar are only just seen clear of the town, when she should stand for the boats in the creek.

at low water : a reef runs off  $1\frac{1}{4}$  miles S.W. from the tower, and there is another projecting as much on the north side of this creek.\*

The water is very shoal off the west side of Shaikh Saad ; and between it and Maharrak a rocky flat projects about a mile, with a deep blind channel between it and Alafdán, which runs southward till opposite, and only  $3\frac{1}{2}$  cables from the town, being separated at the head by a narrow rocky ridge from Khor Sultáni.

From Bandargá creek to Ras ash Shatt are extensive mud-banks intersected by numerous large and deep creeks, which are all shallow at their entrance. There are a few sand-knolls on these mud-banks, only covered at highest springs, and visible from the Inner road at low water.

**TIDES.**—It is high water at Bushire, on full and change, at about 7h. 30m., the time being somewhat variable. The spring rise and fall varies from 6 to 8 feet, and the neaps rise from 4 to 6, their range being 2 to 4 feet. In summer the day tides, and in winter the night tides, are much the greater, the second tide being, in either case, almost imperceptible. The winds affect the tide very much, the shamál making it later, and lowering the general level of the water, while the sharki causes high tides, and prevents the water from ebbing.†

In the offing, the stream is weak, setting up and down the coast, and sometimes replaced by currents, of a half to one mile per hour, setting with, or perhaps against the prevailing winds (*see* page 18). In the entrance to the harbour, the stream sets North and South, and when near the Inner bank, eastward, across it into the creek, tending to set a vessel over to that side ; and the ebb the reverse. In the anchorage it sets East and West along Lakfa bank, and is weak on the shoal flats north and east of the anchorage. The tide is very strong in Khor Sultáni opposite the town, and sets eastward and westward across and through the Inner bank until that bank is dry when it takes the direction of the channel. The stream is also strong round the north end of Shaikh Saad.

**DIRECTIONS.**—A pilot‡ will always come off, weather permitting, if a vessel heave-to for him ; she should do so in  $3\frac{1}{2}$  to 4 fathoms with the Residency E. by N. ; a vessel drawing more than

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\* At  $1\frac{1}{4}$  miles N.N.W. of Shaikh Saad, is a small sandy point called Tihimíya, with rocks extending some distance off, on which foot passengers to the interior sometimes land at high water.

† The July spring tide is the highest in the year which may be due to the S.W. monsoon heaping up the water in the gulf.

‡ The charge for pilotage is only  $1\frac{1}{2}$  keráns per foot draught, and it is advisable to employ one, to encourage them in coming out to meet ships.

14 feet would have to wait for the tide. The mud is so soft in the entrance channel, that a vessel would come to no harm if she touched the bottom in that part.\*

Making the place.—When so far out that the low land is not seen, Gísakán bluff, which bears N.E.  $\frac{3}{4}$  E. from the town, will, in clear weather, enable a vessel to judge her position.

Coming from the southward, if tolerably close in, the date groves in Halíla bay will be the first objects seen; a ship may keep in soundings of 5 to 7 fathoms till past Rishahr, when the depth decreases, and she may keep in  $3\frac{1}{2}$  to 3 fathoms, or a mile off shore, till opposite the tail of the Outer bank, when the depths will decrease to  $2\frac{1}{2}$  fathoms. By night, she should endeavour to sight the land, by keeping as close in as possible, paying great attention to the lead, so as not to run past the town, and get too near the low point Ras ash Shatt. The town would be seen forming the termination of the land, appearing detached from the peninsula, and if a Government vessel were in the harbour, blue lights, &c., would be answered; also probably from the telegraph office at Rishahr. At night, a stranger had best anchor in 4 to 5 fathoms with the town East to E. by S.

Coming from the northward, a vessel would stand past Ras ash Shatt in 5 fathoms, being guided by the lead; when abreast of that point, which is not visible more than 3 miles, the high bádgir in the town would be sighted; she would then stand along the edge of the Outer bank till opposite the town.

Standing in from seaward, the house to the southward of Iman Záda mosque would be first seen, especially in the afternoon, showing white, when in 18 to 20 fathoms, the town not being seen till in 15 fathoms. The soundings are quite regular.

**Buoys.**—The buoys formerly maintained in the entrance channel are not now in position.

**Entering the Harbour.**†—The tail of the Outer bank should be crossed with the Residency bearing E. by N. for a large vessel, and East to E. by S. for a small vessel. By bringing the Residency E.N.E., or the north end of the town on with the fall in the highest part of the Gísakán range, a vessel would get about a foot more water; but it is an advantage to cross as high up as possible, as it is the easier to fetch in with the prevailing winds; the bank, also, is more defined, and it is easier to make sure you have crossed it. The water will shoal regularly, but quickly up to its edge, and when on

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\* Unless indeed a steam vessel, whose injection valves were under the bilge.

† There are no good leading marks, and the mountains are commonly not visible.

it, the bottom is somewhat harder than on either side of it. With the Residency East, this difference is marked, but when bearing E.N.E., the variation both of depth and nature of bottom is very slight, and requires great attention to the lead to observe it. There is no good cross bearing to tell you when you are over it. Ras Shagháb, the outer point of land known by the small clump of date trees, bears S.S.E. when inside it, and S.  $\frac{1}{2}$  E. when over on the east side of the entrance channel. With the Mafka light tower in one with the large house to the southward of Imamzáda, you are well over and on the east side of the entrance channel. If running up from the southward along shore, a vessel may pass Ras ash Shagháb at half to one mile off, and should not bring that point to bear southward of S.  $\frac{1}{2}$  E. till off Ras al Marg, the north-west point of the Inner bank. Except at high water the edge of the small reef off Shagháb shows well.

As soon as you are sure of having crossed the Outer bank, haul up N. by E. to N. by E.  $\frac{1}{2}$  E., till past Ras al Marg, or if you have to work up, tack on either side as soon as the water begins to shoal. In working up in a small vessel, you may stand over towards the Inner bank, till the south end of the Residency cliffs is nearly in one with the two large round trees, on the rising ground to the left of Imam Záda, or till those cliffs are just inside the notch in Asses' Ears range, if the hills are visible. It is not advisable to get a hard cast on the edge of the Inner bank, when near Ras al Marg, unless in a small quick-working vessel, as you would then be very close to the shoalest part.

Ras al Marg generally shows well by the breakers on it, except near high water, or when quite smooth. When off it, Residency flagstaff bears S.S.E.  $\frac{3}{4}$  E., the two date trees on Shaikh Saad E.  $\frac{3}{4}$  N., and the shipping in the anchorage E.N.E. The bearing of the shipping is the best guide, especially at night or in thick weather. The narrowest part of the channel is opposite Ras al Marg, being there only half a mile wide, and the Outer bank is at this part rather steep-to; on the north side of Ras al Marg, 4 fathoms are within half a cable of the dry part of Lakfa bank. The tower on Shaikh Saad on with South pap or small Ears peak on the lower range beyond Gisakún bluff clears the danger, but this mark is not easily made out. When past this point, you may stand north-eastward, keeping the shipping a little on the starboard bow, and anchor, according to the draught, with the Residency S. by E.  $\frac{1}{2}$  E. to S.  $\frac{1}{2}$  E. The two date trees bearing E.  $\frac{1}{4}$  N., or just open southward of a small peak on the back range, to the right of the little barn and paps already

mentioned, will be a close mark to clear the whole of the Lakfa bank on its north side.\*

**JEZÍRAT KHÁRAG** or **KHÁRIJ** is 4 miles long North and South, by 3 miles broad at the northern end. The north-east point bears N.W. by W. 31 miles from Bushire. Khárag has a range of table-topped hills, ending in bluffs, running North and South its whole length; on the highest point is a small tomb, with a dome, near the middle of the island; it is elevated 284 feet, and visible 17 to 18 miles. The hills end at the south point in precipitous bluffs, with detached table lumps. Towards the north-west end the hills decrease in height, and end there in cliffs 20 to 30 feet high. At one mile from this point, and one-third of a mile from the north coast, is a quoin-shaped hill, about 200 feet high, with a tree and small building on the summit, and conspicuous, except from the northward, when it is not seen against the other higher hills. The west coast has a series of rocky points with sandy beaches between, the hills ending abruptly in cliffs. On the east side is a plain, a mile in extent, and cultivated in parts with date groves and gardens, having a pretty appearance from seaward. It ends in the low sandy north-east point, on which stands the fort and village,† with a flagstaff in the north-east angle, or citadel. This is the observation place, in lat.  $29^{\circ} 15' 25''$  N. and long.  $50^{\circ} 20' 10''$  E. It contains now about 400 men, chiefly fishermen. Excellent water is easily procurable here, from wells close to the beach, and at a cheap rate. A few cattle, and some vegetables, &c., may be procured, and there are some antelope among the hills. This island, with Khárgu, is under the governor of Bushire. The best landing at low water is just northward of the flagstaff; at high water you may land anywhere along the beach near the fort, the boats running over the reef.‡

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\* By attention to the lead, steam vessels drawing 13 to 14 feet water have been taken in at night.

† This fort, which is a third of a mile in length, was built in 1754 by the Dutch, who established a settlement here, but were dispossessed by Mir Muhinna in 1765. It is ruinous, except the citadel in the north-east corner, which is not a work of any strength. The English have occupied this island on two occasions, from 1838 to 1842, and 1856-7. At  $1\frac{1}{2}$  miles westward of the fort, is a tomb with a spire on the rising ground, the shrine of Mir Muhammad, a son of Ali; an inscription states that it was rebuilt 540 years ago. There are 9 or 10 other Muhammadan shrines on the island, in one of which is shown the impression, in the rock, of the hand of the prophet al Khizr, believed by them to be still alive. Just eastward of the mosque, are some caverns excavated in the rock, and used for burial places; below these are many ancient troughs or cells, also excavated in the rock, similar to those at Táhiri. At one shrine you are shown the tomb of a saint, said to have been 40 cubits in height. The tomb is of that length

‡ See plan on Admiralty chart, Persian gulf, No. 2,837b.

Khárag is surrounded by a rocky reef, extending nowhere more than half a mile off shore. From the fort point there is no reef, but a sand spit extends three-quarters of a mile off, with not less than  $3\frac{1}{2}$  fathoms on it close to the point, and  $4\frac{1}{2}$  farther out, 6 to 10 fathoms being close to on either side. South of the fort point the east coast forms a sandy bay, in which the reef extends one-third of a mile off shore, with 7 fathoms close to its edge.

**Anchorage.**—The most convenient anchorage in summer is in 7 to 8 fathoms, a third of a mile off shore, with the quoin hill just open southward of the fort, and quite sheltered from the shamál; in winter, a vessel should anchor farther out, in 9 or 10 fathoms, as, if a sharki came on, she would have to shift round north-westward of the fort, and anchor with the flagstaff S.S.E., three-quarters of a mile, in 7 fathoms, sheltered from the south-easter, but exposed to the shamál. This anchorage is in the strait between this island and Khárgu, and quarter of a mile off the reef on the north side of the island. The holding ground is indifferent, and during the winter a vessel must always be prepared to shift round the point, according to the wind, and it is preferable to do so at the commencement of the gale. In the summer, native boats are made fast to the shore, in a small bight formed by the extreme of the fort point, with about 6 feet in it at low water. Westward of the fort, the shore forms a sandy bay, the reef extending half a mile off in the centre. Off the north-west point the reef does not extend more than a quarter of a mile; the west side has not been examined, but the reef is less extensive than on the north side; off the south end there is no reef beyond 2 cables.

**JEZÍRAT KHÁRGU or KHUWAIIRIJ,\*** a very low white sandy island, visible only 6 miles by day, and very difficult to see at night, is 3 miles long N.N.E. and S.S.W., by a third of a mile broad; its south end lies North  $2\frac{1}{4}$  miles from Khárag fort flagstaff. It is barren and uninhabited, has some brushwood on it, and a few stunted date trees at the north end, where indifferent water may be obtained by digging shallow wells.

The north end of Khárgu is clear of reef; on the west and south sides, a flat rocky reef extends half to three quarters of a mile off, with 7 to 10 fathoms close to. On the east side, foul ground extends a quarter to half a mile, with 12 to 15 fathoms within a quarter of a mile of its edge; the best landing is at the north-east corner.

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\* Called by the Arabs also Khuweiri.

**Soundings** near Khárag and Khárgu.—In the strait between the two islands, the clear channel of which is a mile broad between the reefs, the soundings are irregular, 5 to 9 fathoms, over hard bottom, and these depths are carried close to the reefs. Khárag shore reef is deep-to on its west and south side; no soundings have been taken close to the edge, but there are 25 to 30 fathoms, the deepest water in this part of the gulf, at a short distance off it, and off the north-west corner; on the east side, 21 fathoms are 6 miles off; this is the deepest water between the island and the main, and thence the depth decreases to 12 fathoms, at one mile off the island. At one mile from the east and north sides of Khárgu there are 18 to 25 fathoms, the depth thence decreasing towards the mainland. On the west side 12 fathoms are found close to the reef, and also at 2 miles from the island; the depth increasing to 18 fathoms at 5 miles distance.

**DIRECTIONS.**—*See* pages 46–7.—Attention is required to the tide, which is strong near the islands and through the strait. Khárgu is sometimes seen on a moonlight night, showing as a white streak, but not till near the reef, which is very steep-to on the east side of the island. Khárag, from its brown colour, is often quite invisible at night.

**TIDES.**—It is high water, full and change, at 8 hours, rise and fall 6 to 7 feet.

**RAS ASH SHATT to RAS HUL BAHRKÁN.**—The coast runs about N.N.W. for 73 miles to the head of the bay called Dúhat Dílam, the northernmost bight of the Persian gulf, and thence turns to W.S.W. for 28 miles to Bahrkán, at which point the delta formed by the Mesopotamian rivers commences. Northward of Khárgu the depths are under 20 fathoms, quite across the gulf, decreasing towards the rivers.

The tides are perceptible all along this shore, increasing in strength to the northward; they set along the coast and round Dílam bay.

**ASPECT of the COAST.**—The shore is low, the mountains being at some distance inland, excepting Kuh i Bang,\* which is a range of hills 1,000 feet high, and visible upwards of 30 miles: the highest part is 30 miles N.  $\frac{1}{2}$  E. from Khárag fort. It lies only 2 miles from the coast, and has a precipitous face on its seaward side; so that from the southward it makes in a remarkable bluff of light colour, with rather a jagged outline. The range extends 12 miles nearly

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\* There is said to be a ruined fort on the summit of this hill.

parallel to the coast. North of Gisakán bluff are a series of mountain ranges 30 to 40 miles from the coast, over which are seen the tops of others, covered with snow in winter. Inland of Kuh i Bang, and separated from it by a valley, is a range about 15 miles from the coast, 2,000 to 3,000 feet high, but with no conspicuous peak on it. Its southern end is 30 miles north of Bushire, the country south of it appears to be low from the coast as far inland as the Gisakán range.

A range of lower hills, running East and West, comes within 3 or 4 miles of the head of Dílam bay, and thence turns to north-westward into the interior, decreasing in height to the westward. This range is the westernmost of the Persian hills; the whole head of the gulf west of it being a low alluvial plain. On this range, 25 miles E.  $\frac{3}{4}$  N. from Dílam town, is a sharp peak, remarkable when on that bearing; and at its western extreme, and remarkable as seen from Dílam bay, is Funnel hill, which is 26 miles N.W.  $\frac{1}{2}$  N. from that town, and 550 feet high.

**KUH BEBAHÁN** is a great mountain mass of irregular outline, lying in an east and west direction; the highest part is 10,400 feet high, and in very clear weather is seen 125 miles, or from near the bar of the Basra river. The summit is  $46\frac{1}{2}$  miles N.E. by E. from Dílam, and has snow on it for 6 months in the year. To the left of this are seen in very clear weather from the bar of the river, the two Kuh Rúmaz ranges, much higher than the last, with much snow on them in winter.

The coast from Ras ash Shatt to Sabz Pushán, a distance of 36 miles, is low and sandy; the soundings are 10 fathoms at 3 miles off, abreast Ras ash Shatt, and the same depth 6 miles off shore farther to the northward; 15 fathoms being 4 to 9 miles off at the same parts. There is little or no shore reef, and no outlying danger. There is no shelter from the prevailing winds on this part of the coast.

**Khor Rúhilla.**—From Ras ash Shatt the low strip of land forming the coast has a N.N.W. direction for 5 miles to the entrance of this khor, which is navigated by boats of small burden for some miles to the village of the same name. It is shallow at the entrance, and after rains a good deal of water is discharged through it from a river, in which there is always water beyond the range of the tide. Its banks are overflowed at high water for some distance from the mouth, the coast line being only a few feet above the level of high water, and consisting of a narrow strip of sand, with a few tufts of grass. The village of Rú hilla is small, the only thing seen from



seaward over the swamps, is a small clump of date trees  $5\frac{1}{2}$  miles N.E. of the entrance; there are several other salt water creeks on either side of this one, each of which has a native name; they are all shallow at the entrance, and have deep water inside, and are no doubt part of the delta of the river.

**Bander Rig\*** is a small town with some date trees near the coast, 13 miles N.  $\frac{1}{2}$  W. of Khor Rúhilla, inhabited partly by Arabs of the al Zaab tribe. This place and the country near it are under the governor of Bushire. There is a small khor at the town, and it is fronted by two sandy islets or banks, inside which native boats lie aground at low water; much grain is exported from this place to other parts of the gulf.

The coast between this and Rúhilla is all low and sandy and forms a slight bay, in which the 3 fathoms line is about 2 miles off shore. About half way between Bander Rig and Rúhilla is a large creek, called Khor Gasair, with a small village near its mouth and frequented by large boats. From Bander Rig, Sabz Pushán point, a slight projection of the coast, bears N.W. by N. 18 miles.

**Kanáwa or Ganáwa†** is a large village half a mile from the coast, with a few date and other trees, and a large tomb at the north end with a dome or spire. On the sandy shore, half a mile S.W. of the tomb stands a large round banyan tree, very conspicuous as a landmark, which is 21 miles N. by E.  $\frac{1}{4}$  E. from Khárag flag-staff. At this place the authority of the governor of Bushire ends, the country to the northward being under the Khan of Bebahán, a large place some distance inland. The landing at low water is bad, as there are several ridges of dry sand, with 2 or 3 feet water inside them.

**Supplies.**—The village is inhabited chiefly by cultivators, and little is to be procured except fowls, which are very fine, cattle, and vegetables.

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\* This paragraph from Capt. Brucks' memoir. The name means sandy harbour.

† The tomb at this village is of some antiquity, and eastward of the town, and extending far beyond the watercourse mentioned in the next paragraph, are very extensive mounds, indicating the site of a very ancient city. There is no masonry to be seen above ground, but where the watercourse has formed a section through the mounds, masses of masonry are seen on its banks and in it, built down as low as its bed, or 12 to 15 feet below the present surface of the ground; the masonry is good, and set in mortar; burnt bricks are also common materials, showing considerable antiquity. One or two wells, smoothly lined with cement, have recently been uncovered by accident, and large numbers of baked clay sling stones are found among the mounds. There are said to be many of these ruins or mounds along the coast to the northward, as far as Imám Hussein.

The anchorage opposite the tree in 3 fathoms is nearly  $1\frac{1}{2}$  miles off shore.

**Khor Khalíl** is the mouth of a tidal creek or river, which in rains discharges a large quantity of fresh water. The tide flows up it for several miles, and it is entered at high water by boats which belong to Kanáwa, and carry on a small coasting trade. Its mouth is  $1\frac{1}{2}$  miles south of Kanáwa tree, and has no nearer landmark to distinguish it; dry sands extend at low water one to 2 cables off it. The bed of the watercourse trends round to northward, passing about a mile inland of Kanáwa village.

**Kalat Haidar**\* is a small village on the coast 4 miles to north-westward of Kanáwa; there are a few date trees near it; the inhabitants, who are cultivators, are poor but civil people, though wild in appearance.

**SABZ PUSHÁN†** is a slightly projecting rocky point, with hillocks 40 to 50 feet high and covered with jungle close to the shore. On the summit is a small tomb, only seen when close in, which is in lat.  $29^{\circ} 39' 8''$  N., and long.  $50^{\circ} 24' 46''$  E. A rocky shore reef extends one to  $1\frac{1}{2}$  cables off this point, and there is a little watercourse close eastward of it.

**SABZ PUSHÁN to RAS AT TANB.**—The coast, just above the former place, runs N.W. for 7 miles, and thence trends rather to the northward for 17 miles more, to Ras at Tanb‡; there are low hillocks covered with shrubs along shore till near it.

At 7 miles N.W. of Sabz Pushán, and S.W. by W.  $\frac{1}{2}$  W. from the highest part of Kuh i Bang, is a small tomb on the coast hillocks about 50 feet above the sea; the land between it and that hill, which is here only  $2\frac{1}{2}$  miles inland, being undulating, and rising towards the foot of the range. The coast is nearly straight between this tomb and Sabz Pushán, and has no shore reef beyond one to 2 cables; 4 fathoms are one mile off shore at this part, and it deepens regularly to 10 fathoms at 4 miles off.

**Khor Síni§** is a small creek, about midway between the tomb just mentioned and Ras at Tanb, with deep water inside it. To the south-

\* Called also Ka Haidar or Káid Haidar.

† This name means "green cover."

‡ The hills inland of this part are said to be infested by robbers, and, if landing, or, at any rate, if going any distance inland, it would be advisable to be on your guard against straggling parties.

§ This paragraph is taken from Capt. Brucks, who states also there are extensive ruins at Khor Síni.

ward of it is an old tomb or mosque, called Imám Hussein, which is a good landmark; there is a small village and some trees near it. Khor al Abd is another creek, smaller than the last, and about 3 miles to south-eastward of Ras at Tanb. One mile below that point is a creek called Khor Lúlatain. The coast is safe to approach to a mile, the depths decrease to the northward, 10 fathoms being about 12 miles off shore S.W. of Ras at Tanb.

**RAS AT TANB** is a low sandy point forming the south extreme of Dúhat Dílam; the land inshore of the sandy ridge forming the coast is swampy for many miles. Dry sands extend nearly a mile off this point, and the soundings appear to decrease regularly on approaching their edge.

**RAS AT TANB to RAS BAHRKÁN.**—The coast forms a deep bay called Dúhat Dílam, with soundings under 8 fathoms; the shore is everywhere quite low, and only visible 3 or 4 miles; as the 3-fathoms line is generally 3 to 4 miles off, it is not often sighted.

**DÍLAM** is a town and fort, standing on the low coast 5 miles N.  $\frac{1}{4}$  E. from Ras at Tanb. The square fort, in and around which the houses are built, is the first thing seen when approaching it, and is in lat.  $29^{\circ} 57' 58''$  N., and long.  $50^{\circ} 17' 36''$  E. Half a mile to the southward of the fort are a few round trees, with a little cultivation, and at  $2\frac{1}{2}$  miles N.N.W. of the fort is a single large round tree. Nine miles S.E.  $\frac{1}{2}$  E. of Dílam is a small table-hill, of light colour, with perpendicular sides; it is 165 feet high and visible 14 miles. The coast here forms a mere strip of rocky land, only 10 to 15 feet above the sea, inland of which are swamps extending for several miles. At  $1\frac{1}{4}$  miles north-eastward of the town is a small fort, near the wells from which the town is supplied with water, and which lie on the other side of the swamp. Several forts with date groves are visible in the distant plain northward of the table-hill. Dílam is the port of the district of Bebahán, and grain, ghee, &c., is exported, chiefly to Bushire and Kuwait. The Arab portion of the inhabitants is of the Obaidil (?) tribe. Mud flats dry off half to one mile from the town, rendering landing difficult at low water. The native boats lie a quarter of a mile off the town, in a small creek in this flat, dry at low water; the cargoes being loaded and unloaded on asses.

**Supplies.**—Cattle, &c., are obtainable. Water is expensive, being brought from a distance, and indifferent.

**The Anchorage** in  $2\frac{3}{4}$  fathoms, soft mud, is  $2\frac{1}{4}$  to  $2\frac{1}{2}$  miles off the town; it is sheltered in a shamál, but there would probably be much sea in a south-easter, though partly sheltered from the wind.

**Shah Abul Shah\*** is a village with a large white domed tomb on the coast hillocks, visible 9 or 10 miles; it is  $7\frac{3}{4}$  miles N.N.W. of Dílam, with the people of which place the inhabitants are often at feud. There is a small creek here, and some coasting trade is carried on.

From this place the coast trends round to W.S.W. towards Ras Bahrkán; and is low with shoal water off it. As the soundings are regular, it is safe to approach by the lead. The hills are here within 3 miles of the coast, but a short distance to the westward they turn northward, away from the coast, which, West of this place, is all exceedingly low quite across the head of the gulf to Kuwait, being the delta of the great rivers.

**RAS HUL BAHRKAN, or BAHRKÁN**, is a very low point formed by a strip of sand with tufts of grass, nearly overflowed at high water. Inland of it, all is swampy for some miles. At a distance of 3 miles are seen, when near the point, some date groves and a tomb called Mir Amman, which are probably on the Hindiyán, or Tab river. Mud flats, overflowed at high water, extend some miles westward of the point, and also half a mile off its south-east side. As 2 fathoms are 3 miles off to the southward, this point can only be sighted in a small vessel.

**Siríma†** is a small cluster of round trees on the low shore, about 9 miles N.W. by N. from Ras Bahrkán, serving as a mark for the entrance of the Tab‡ river, which lies between these trees and the point; the entrance, which is very shallow, has not been surveyed on a large scale. The boats navigating the river are only 20 to 30 tons.

**Ras at Tullúb or Tunúb** is a low point of the main, with a few shrubs and some brushwood near it, lying 18 miles W.N.W. of Ras Bahrkán. About 3 miles to the northward of it is the mouth of a river or creek, joining the Tab river, with some extensive ruins on its banks. The coast to the northward of this point has not been traced, it is nearly all overflowed at high water.

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\* So called from the Mussulman Saint buried in the tomb.

† From this, as far as the mouth of Shatt al Arab river, is chiefly compiled from Capt. Brucks, Lieutenant Whitelock, Horsburgh's Directory, and information given by the head Basra pilot (Abd ar Rahmán, 1858).

‡ Lieut. Whitelock, I.N., who visited this river, says the town of Hindiyán is about 30 miles from the mouth, and a poor place built on both banks of the river; the inhabitants were not friendly; the river is very winding, especially near the mouth; some of the reaches come within 2 miles of the coast to the eastward of Bahrkán, so that native boats lying outside sometimes send across to the river for fresh water.

**FASHT AL MIAIRÍZ** is an extensive bank of sand and mud, extending 11 to 12 miles south of Ras at Tullúb, and dry in patches at low water. There is a channel, called Khor Ghazlán, separating it from Ras at Tullúb. The channel between this and the Bahrkán shoals is about 4 miles broad with 5 to 3 fathoms water, and is called Khor Bahrkán.

**Banna** is a low narrow island,  $3\frac{1}{2}$  miles long, with a ruin on it, lying 2 miles west of Ras at Tullúb, with a deep khor between it and that point.

**Daira** island is low and partly swampy; it lies 3 miles S.W. of Banna, and there is a deep water khor between them, running to the southward, called Khor Wásta. Aich Shaham, a sand-bank lying southward of this island, is steep-to. To the northward of these islands are many banks with deep channels between, lying on the east side of Khor Músa, which have not been explored; the channels have in places 15 fathoms and upwards.

**KHOR MÚSA** is a salt-water inlet, receiving the water of the Daurak river, and possibly a branch of the Karún. It runs in a N. by W. direction, passing about 5 miles to westward of Daira island; at 10 miles N.W. by N. of that island there is a low islet, called Kabr an Nakhuda; from the south end of this a bank, partly dry at low water, extends southward as far as the entrance of Khor Músa; it forms the eastern bank of that inlet. At 7 miles north-west of this islet the khor splits into two branches. Kaseir bint Sisuan is a small rocky shoal in the middle of Khor Músa, about 3 miles S.S.W. of Kabr an Nakhuda; it has deep water on each side, and is steep-to. From this a long and very narrow bank extends southward, dividing Khor Músa into two parts; the soundings on it increase to 4 and 8 fathoms near the entrance, there being 8 to 12 on each side of it.

On the western side of Khor Músa is a low swampy tract, about 15 miles in breadth between that creek and Khor Bahmishir. The south-eastern point of it is called Bu Seif: close to the westward of this is Khor Daurakistán, a creek which is shoal at the entrance, and is said to join Karún river. The low coast on the west side of this creek, as far as Khor Bahmishir, also bears the name of Daurakistán.

About 8 miles westward of the last is another creek, also joining the Karún river called Khor Silij, but neither of these creeks has been explored for any distance.

**MAIDÁN ALI**, sometimes called the Ali Maidán, is the name of the great flat lying off this part, with soundings increasing regularly

from the dry part : it is about 15 miles in breadth, and the soundings are quite regular on it;\* the lines of equal depth being probably parallel to the coast, or about W.S.W. and E.N.E. ; the depth of 2 fathoms being 4 or 5 miles from the shore, and that of 4 fathoms about 13 miles. The bottom on it is mud and sand, the latter predominating as the shore is approached. It is useful as a mark in making the river (*see* page 296).

Off the south-west corner of the Maidán Ali is a detached rocky bank ; least water said to be 4 fathoms. It is not a danger for ships bound to the river, as no greater draught than 19 feet can cross the bar. This bank lies S.E. by E. from the bar of the Shatt al Arab.

**Khor Bahmishir** or Bahman Shir, on the west side of the Maidán Ali, is the natural mouth of Karún river : it runs to the north-westward nearly parallel to the Shatt al Arab, and joins the Karún near Muhammera, about 35 miles from its mouth,† but is shallow near its junction with that river. The sand-bank on the east side, dry at half tide, which extends off the south-west corner of Daurakistán, is called Margán. From a reconnoissance made in 1888, in the S.S. *Lawrence*, the channel leading from sea to the mouth of the Bahmishir is tortuous, and there is a shallow sandbank to be crossed to reach it. The above steamer, which is of 9 to 10 feet draught, ascended the Bahmishir for about 20 miles. She found 3 to 5 fathoms water when inside the river for that distance, thence to the junction with the Hafar, only 3 to 1½ fathoms at low water. §

**Khor Kafka** is a gut running nearly parallel with the Shatt al Arab, westward of Khor Bahmishir, with soundings decreasing from 15 fathoms at the southern end, to 3 and 2 near the Abadán shore. This khor does not enter the land, but bends round at 2 miles distance from the coast, and taking a west direction, joins the Shatt al Arab below its entrance between banks visible above water. The east and west portion of this khor, in which the soundings are only 1½ fathoms at low water, is called Khor Nasári.

**SHATT AL ARAB** ‡§ is the name by which the united stream of the Tigris and Euphrates is known to the Arabs ; it is a fine river, navigable for large vessels beyond Basra, or to a distance of about

\* Hence the name Maidán, signifying level.

† Captain Butterworth, in 1889, passed down and up Khor Bahmishir from Muhammera to the entrance and back, in the screw launch *Arab* ; length, 50 feet ; draught, 4½ feet. The least depth found was 6 feet at low water.

‡ Or "river of the Arabs;" it is commonly known as the Basra river, or incorrectly, Euphrates.

§ *See* Admiralty plan, Shatt al Arab and Bahmishir rivers, No. 1285.

70 miles from the bar. Its breadth near the mouth averages three-quarters of a mile, with soundings of 3 to 4 fathoms at low water.

The entrance of the river, which is about 11 miles from that part of its banks, which are dry at high water, lies between two banks under water; that on the eastern side, which separates it from Khor Kafka, being called Marakat Abadán or Abadán bank, and that on the west side, separating it from Khor Abdalla, Marakat Abdalla, or Abdalla bank. This latter is of very soft mud, the water on it shoaling gradually from its tip, where there are 2 fathoms or less, towards the land, off which it dries at low water for a considerable distance; the Abadán bank is somewhat harder, having some sand mixed with the mud; like the other, it shoals gradually from 3 fathoms on the south tip to the northward. Both are steep to on the side towards the river, especially near the dry part. The entrance is divided into two channels by a hard sandbank, called Aich Miyán,\* which is nearly dry at low water, and the principal danger entering the river; it is hardest at the south end.

The points of land on either side of the entrance of the river between its banks are not visible from the bar. Both are very low, with tufts of reeds. The western point, which projects the most, is called Ras al Bisha; it slopes off very gradually from where the reeds are growing to the part which is only dry at low tide.

On the west side of the Abdalla bank lies the khor of the same name, already described (*see* page 162). It is not frequented by shipping, excepting small boats trading to az Zubair. The telegraph cable is laid up this khor until opposite Fao.

**Bar.**—The best channel, and that always used, is on the west side of the Miyán bank. The eastern channel, called Mahadda Miyán, has only 3 feet† at low water. In the western channel, at its shoalest part or the bar, the least water is 10 feet at ordinary low-water springs; the winds influence the depth of water, and with a Shamál there are only 7 to 8 feet on the bar when the river is at its lowest.

The Arab pilots say there are 4 fathoms at high water on the bar of the river twice in the year (at other springs only  $3\frac{1}{4}$  to  $3\frac{1}{2}$ ), viz., in June, after the snow has melted up country; and in October, the probability of which latter is doubtful.

**Tides.**—It is high water at full and change on the bar at 12h.; rise and fall 8 to 10 feet.

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\* *i.e.*, middle ground shoal; it is generally pronounced Miyán.

† More water is reported by the pilots in the eastern channel.

**PILOTS.**—As already stated at page 47, the pilots for the river are indispensable, and can be taken on board by ships proceeding thither at Bushire or sometimes at Linja, and they expect to be landed on the return voyage at the same place. The rate of pilotage is 15 keráns per foot draught for each time they cross the bar; and  $1\frac{1}{2}$  keráns per day as long as the vessel remains at Basra or Makíl.\*

**Draught of vessels.**—Vessels drawing more than 10 feet must wait for the flood to cross the outer bar. At high-water springs vessels of 18 to 19 feet draught can be navigated up the river as far as Basra.† At neaps the draught is restricted to 14–15 feet.

As the mud is very soft, powerful steamers are often forced through a foot or more of mud, and vessels load to the actual depth available on the bar.

**Caution.**—Constant changes are in progress in the river from the bar to Basra.

#### **DIRECTIONS from KHÁRAG to the SHATT AL ARAB.**

—On leaving Khárag the pilots take charge, and with a fair wind, steer to N.W. till in 10 fathoms off Ras Bahrkán; the course is then W.N.W. and W. by N. till on the Maidán Ali, which is their great mark for making the river; on this course the water will deepen to 12 fathoms crossing Khor Bahrkán,‡ then shoal to 7 on the tail of the Miairiz, again deepening to 15 in Khor Wásta. After getting 7 fathoms on the east bank of Khor Músa, that khor will be crossed in 12, perhaps getting a cast of 8 on the narrow ridge in the middle of it, and then striking the Maidán Ali in 5 fathoms.§ See also page 293.

With a foul wind, they work up the Persian coast till past Kuh i Bang, and when off Bahrkán in 4 to 5 fathoms stand across West to the Maidán Ali, getting successively 10 or 11 fathoms in Khor Bahrkán, 3 or 4 off the Miairiz sand, 12 in Khor Wásta, 4 fathoms on the bank

\* Mr. Paul, agent of the mail steamers, has given figures for draught in the year 1889. H.M.S. *Kingfisher*, in 1888, gives  $1\frac{1}{2}$  fathoms as the depth on the bar at low water.

† In 1888 H.M.S. *Sphinxæ* proceeded up to Basra and down again in charge of her own officers.

‡ The khors, and banks between them, all have continuations a long way to seaward, perfectly defined by the difference in the depth of water, the soundings in which are what the pilots entirely trust to to make the river. The reason of their making a course round by Bahrkán is to ascertain how many of the khors they have passed, and this was their only way of making the entrance. When once on the Maidán Ali they feel certain of their position.

§ The space in which these overfalls between Khor Músa and Bahrkán occur is called by the pilots Kharába.



between that and Khor Músa, and 9 in the latter khor, getting on the Maidán in 3 fathoms.

When sure of being on the Maidán, by the regularity of the soundings, stand across it W. by S. to W.S.W. so as to keep in a line of 4 to  $4\frac{1}{2}$  fathoms low water; if you cannot lie up high enough, a short tack or two must be made to the northward, working between 4 and 6 fathoms, so as to be in the above depth when leaving the flat. If the tide is unfavourable, with a working wind, the pilots anchor on it until the flood makes. If a strong south-easter is blowing, they will not attempt to cross the bar, but will wait till it is over.

Crossing the Maidán Ali in 4 to  $4\frac{1}{2}$  fathoms, you will get 13 to 16 in Khor Kafka, and will cross the tail of the Abadán in 4 or 5 fathoms, sandy bottom, deepening again to 7 or 8 fathoms in the entrance of the river. The pilots stand across till they shoal on the Abdalla bank, and then tack, working between that bank and the Miyán sand, till past the bar. In crossing the mouth of the river from Khor Kafka, you will have a little shoaler soundings in the centre, on the tail of the Miyán sand, but the Abdalla bank is recognised by the very soft nature of the bottom.

If you cross the Maidán in  $3\frac{1}{2}$  fathoms you will get 12 in Khor Kafka, which would be due East of the south end of the Miyán, and must then keep a little to the southward to avoid that bank.

In working past the Miyán, you should keep on the Abdalla side, tacking directly you shoal the water near the Miyán, as it is very steep-to. A large vessel must of course wait till near high water before attempting to cross the bar.

The pilot should be informed of any local deviation or error of compass. It is now frequently the practice for steam vessels to steer from Khárag, their own course for the outer buoy, which is a large nun buoy with a perch, and easily made out in moderate weather. In that case the pilot does not take charge until the buoy is sighted.

From the bar to the entrance between the dry banks of the river, both the Abdalla and Abadán banks are steep-to, and the pilots tack immediately on shoaling; the western bank, being softer, is the safer to borrow on. The reeds at the mouth of the river will be seen soon after clearing the bar, and the Fao telegraph office about the same time. The edge of the Abadán bank is sometimes defined by the colour of the water.

After leaving the Maidán Ali, if a working breeze, it will be necessary to anchor as soon as the tide makes against you, the ebb

stream running 7 to 8 hours, or even more.\* The direction of the channel after passing the bars is about N.W.  $\frac{3}{4}$  W. with soundings of 3 to 4 fathoms at low water.

Four buoys have been laid down in the entrance channel by the B. I. S. N. Co., one large nun near the S.W. corner of the Miyán sand, the other three are on the edge of the Abdalla bank, and must all be left on the port hand.

The bar of the river changes and the buoys are shifted accordingly, but should not be depended upon†. They are maintained solely at the expense of the mail steamer company, and are purely private property.

A second bar with the same depth of water as on the outer bar (7 to 10 feet, *see* page 295) is reported to have formed opposite the third buoy from seaward, so that heavy draught steamers sometimes take two tides to get out.

A vessel is apt to be set over to one side or other of the channel, which is narrow, being under half a mile in parts.

**General description of the Shatt al Arab.**—The banks are very low on either side for the entire distance, from the entrance as far as and beyond Basra, and intersected by numerous canals for irrigation; the land is often under water, except small raised banks between the plantations. The belt of land near the river from Fao to a few miles above Kurna is exceedingly fertile, and produces very fine dates, also fruit and vegetables of various kinds, with grain, &c. At the back of the date groves, which extend half to 2 miles from the bank, all is a desolate desert or swamp. There are large herds of cattle and buffaloes along the banks of the river; the latter often swim across to graze on the islands in it. Many wild hogs are found along the banks. On the ebb the water is fresh even at Fao, and fit for drinking, except in autumn when the river is low it is slightly brackish; a little farther up it is at all times fresh. Between the plantations of trees are sandy tracts of land along the banks, which are uncultivated, although doubtless equally fertile with the rest. Supplies of fruit, vegetables, and cattle, can often be obtained at the villages on the banks, while waiting for the tide. The land on the east side, south of the Hafar, which forms a long narrow island between this river and the Bahmishir, is called Abadán. The Shatt al Arab from the mouth to within 16 miles of Basra, is the boundary between Turkey and Persia.

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\* *See* Admiralty Plan, Shatt al Arab and Bahmishir rivers, No. 1235.

† The greatest draught known to the steamer agents to have crossed the bar is 20 feet, when the river was high, with a southerly wind

After entering between the regular banks with vegetation, the eye is the chief guide. The seaward and lower part of the banks is all of soft alluvial mud, thickly grown with reeds and coarse grass : it is almost impossible to land, so soft is the mud. The first date grove is on the west bank, about 4 miles from Ras al Bisha ; and there is a small village in it called Fao, which is a thriving place, the plantations are very extensive and yearly extending to the southward. The inhabitants are herdsmen and cultivators. A fort has been built by the Turks, S.  $51^{\circ}$  E.,  $3\frac{1}{2}$  miles from Fao, on the same side of the river.

**Telegraph.**—At Fao the terminal station of the British Persian gulf telegraph cable was established on the right bank of the river 17 miles from the bar in 1864. Messages are received here for all parts.

The observation spot, at the English office is in lat.  $29^{\circ} 58' 35''$  N., and long.  $48^{\circ} 29' 25''$  E.

Two white wooden barracks or offices have been built here, and the Turks have established a custom house, and quarantine department ; also a Turkish vessel mounting 2 guns is stationed here as a guard ship. The Basra mail steamers touch here on their way up and down.

**Light.**—A light is shown at Fao on a post about 40 feet high, but it can be seen only about 2 miles.

**General description—continued.**—A little farther up, on the east bank, begins a large date grove with a village called Kasba,\* below which, and opposite Fao, are a few herdsmen's huts : this part below Kasba is called Shen.

The direction of the river is about N.W. from the mouth, until past the south end of Kasba grove, when it turns to N.  $\frac{1}{2}$  E. for about 4 miles, the deep water being on the Fao side, while off Kasba grove, below the point, there is shoal water for a short distance. When opposite the south end of Maámir trees the channel crosses to the east bank, and again to west bank at the north end of Kasba trees, towards the north end of Maámir groves.

Above Fao there is a space of 2 miles without date trees, at which distance a large grove commences, extending for 3 or 4 miles, with a large fort and village called Maámir† at the back of the grove, not visible from the river. There is also a small village and tower near the south end. Abreast the centre of this grove, is a gap of about 2 miles in extent in the trees on the opposite side of the river : a

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\* This word means "reed."

† The rendezvous of the ships proceeding to attack Muhammera in March 1857, was off this place, which is said by the Arabs to be Bander Shamál, or sheltered from the north-wester, as compared with those reaches running more N.W. and S.E.

small village nearly opposite Maámir, and at the north end of Kusba trees, being called Bokshat al Musaid. The river then bends to the N.W. and N.N.W. for 6 miles, after which it makes an abrupt turn to N.E. for about 2 miles. The point formed on the east bank by this bend is called Manyuhi: there is a large date grove on it, ending just at the bend, with a fort and tomb behind the trees: a shoal flat lies a short distance below these trees, and ends just above the point; the channel crosses over from Dúra trees to above this point. In the concave part of the west bank, opposite Manyuhi point is a date grove, and the small village of ad Dúra. There is a space of about 3 miles without trees between this village and Maámir plantation. The western side of the short reach above Manyuhi point is formed by an island covered with date trees, called Jezírat bin Fadágh, which has a shoal extending nearly half way across the river, lying off the most projecting part; at this island the river bends round again to N.N.W., running nearly straight for about 13 miles, and having date trees on its west bank the whole distance: this long reach is called Kabda reach; the deep channel crosses over above Fadágh island and thence is close to the west bank.

About 2 miles above Fadágh island are two forts at the back of the date groves and a village called Dawásir; and nearly opposite the northern fort, are two tombs on the east side, at some distance from the river. The more distant of these tombs is on the Bahmishir river, which is here only about 3 miles from the Shatt al Arab. The channel is on the Dawásir side as far as Shateit, and a low island with bushes and grass of recent formation, lies along the east bank (which formerly was the deep channel), and extending from opposite Dawásir to Shateit; it is increasing yearly, and is 3 or 4 miles in length.

Above Manyuhi trees there is a distance of about 10 miles along the east bank, without any date trees, except a small clump opposite these tombs. At 3 miles above the tombs is a large date plantation, with the small village of Shateit, and above this a smaller one called Bawarda, which is just below the end of Kabda reach. Above Bawarda, and opposite the south end of Muhalla island, is a small village called Bareim. From Shateit to Bareim the channel lies on the east bank, which the pilots keep close to until past the latter place, when they cross to the al Khast side.

The main channel of the river, at the end of this reach, bends round to West and W.S.W. for about 3 miles, which may be called al Khast reach, a smaller branch running straight on to the north-westward, joining the river again at Harta village, and navigable

by small boats ; the island, of triangular shape, formed between it and the main river, is called Muhalla ; both banks of this branch are thickly grown with date trees, but towards the main channel of the river, Muhalla island is very low and has no trees. It is also intersected by one or two small branches of the river. A bank, which is deep-to, extends off its south and south-west sides, contracting still further the navigable channel. The projecting point, on the south side of al Khast reach, is called al Khast, properly the name of the fort at the back of the date trees, or Deep-water point. This is the narrowest part of the river, and there are 10 fathoms or more close to it ; the soundings from Fao as far as this point, being 4 to 7 fathoms.

Just below al Khast are two or three low islands on the west side of Kabda reach, nearly or quite overflowed at high water, and extending more than half way to Dawásir. The date groves extending along this bank from Fadágh island, end just beyond al Khast.

The river, above this reach, turns to North and N. by E., for 6 or 7 miles, to the entrance of the Hafar and Karún river. The deep channel lies close round the sharp bend opposite Muhalla, and in working up, very short tacks are made between the south bank and the shoal off that island. Large sailing vessels have to back and fill through this reach. At the bottom of the curve is a village and date grove called Seihán, on either side of which is a space without trees for about a mile, whence the date groves are continuous for 2 to 3 miles<sup>†</sup> past Zain point. About 3 miles above the bend, the island of Muhalla ends : the village of Harta standing on the east bank of the river is opposite the north end of that island. Above this village is an open space between it and the date trees lining the south bank of the Hafar. A little below Harta, and near the west bank of the river, is a shoal or mud island covered at high water. The channel at Seihan crosses to the east bank, and lies close along that bank until past Harta, when it is more in the middle of the river until near the Dabba crossing.

**Karún River and Hafar.**—The Hafar is a channel on the north side, 50 miles from the bar, connecting the Karún river and Shatt al Arab, said to be artificial, and very ancient :\* it is about 2 miles long, East and West, a third of a mile broad, and has 3 to 4 fathoms in it ; both banks are lined with date trees. About a mile from the entrance, on its north bank, stands the town of Muhammera,†

\* Some say that Alexander the Great caused it to be cut. Dean Vincent says it is a more ancient work, and that Alexander found it there.

† On March 26th 1857, the strong batteries erected by the Persians at the entrance of the Hafar, for the defence of their entrenched camp at this place, were destroyed in a few hours by the I. N. squadron, and the entrenched camp then captured by the British army.

having a bazaar where a few supplies may be obtained. A vessel can lie off this place close to the bank, but there is no room to swing, and they generally anchor off the mouth of the Hafar. The mouth of the Hafar is the best place to take in water, as it is purer and cooler than the water of the Shatt al Arab, particularly in the hot weather. A shoal is reported to have formed opposite the mouth of the Hafar.

At about  $1\frac{1}{2}$  miles eastward of Muhammera, the Karún river is reached, which runs north-eastward; and from this point, the Bahmishir, the supposed natural mouth of the Karún, runs in a south-east direction to the sea (*see* page 294); but the principal part of the water of the Karún is at present discharged through the Hafar, into the Shatt al Arab.

For\* 117 miles from Muhammera the river can be ascended without obstacle to Ahwaz; throughout which distance it averages 300 yards to a quarter of a mile in width, flowing in a tortuous channel through a country at present almost destitute of vegetation. At Ahwaz, a small village of about 700 inhabitants, continuous navigation is arrested by a series of rocky ridges lying across the bed of the stream, which at low water project above the surface of the water, and on the largest of these ridges are the remains of an ancient dam, forming formidable rapids, which have been surmounted by a steamer when the river is high. At present navigation is not permitted beyond this point. Above these rapids, which occupy a distance in the river bed of about  $1\frac{1}{2}$  miles, the Karún resumes its placid appearance, though flowing here between high banks, and with a contracted breadth of 200 to 300 yards, and can be ascended without difficulty to Bend i Kir, a point, by river, 40 to 50 miles above Ahwaz.

There the river is divided into three branches, the westernmost of which, the Ab i Diz, flows down from Dizful, while the centre and eastern confluent, called respectively the Ab i Shateil, or Karún proper, and the Ab i Gerger, originally an artificial canal, form between them an islet, 40 to 50 miles in length. At the upper end of this island stands the city of Shuster, where dams across both branches prevent any further navigation.

**Draught.**—The practicable draught for the Karún river navigation to Ahwaz is from 2 or  $2\frac{1}{2}$  feet in the low season and  $4\frac{1}{2}$  or 5 feet when the river is high. A vessel of 220 feet in length has been running to Ahwaz.

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\* The description above Muhammera is taken from an article in the *London Times* of 4th February, 1890.

**Communication.**—A British river steamer, the *Shushan*, 98 feet long and 19½ feet beam, drawing when laden 2 to 3 feet, now (1890) runs weekly between Muhammera and Ahwaz on the river Karún. Some native craft also trade to Shuster and Dizful beyond Ahwaz. The Basra mail steamers call at the mouth of the Hafar on the downward passage.

**General description of Shatt al Arab—continued.**—The soundings in the Shatt al Arab at the junction of the Hafar, and thence as far as al Khast, are 5 to 8 fathoms, and in parts even more. From the Hafar the river bends to W.N.W. and W. by N. for about 15 miles, which may be called Dabba reach; then turning to N.N.W. for about 5 miles to the town of Basra; both banks being lined with date groves the whole way.

The point opposite the Hafar, which is called Zain, is deep-to, as are both entrance points of that river. At 4 miles above Zain are two tombs, the eastern one with a spire, the western with a small dome. On the north bank 3 miles above the Hafar, is fort Fahliya, the residence of Shaikh Jábir.

North of Zain point is the east end of a chain of low grassy islands lying nearly in the centre of the river, and called Dabba or Umm al Khasásif. The ship channel, which is narrow, with 4 to 6 fathoms, is at first on the north side of these islands. At the west end of the large Dabba island,\* with the spire tomb on the south bank, bearing about South, the channel crosses to the south bank, between two islands, and lies hence along that side all the way to Basra, having low islands on the north bank, until just below that place. There were formerly not more than 16 to 18 feet at high water in the deepest part over this bar, where the channel crosses from one bank to the other, but it is now deeper, although still narrow.

**BASRA.†**—On the right bank of the Shatt al Arab, and about 67 miles from the bar, is the seat of government of the Pashalik of the same name, which extends for some 600 miles along the lower Euphrates and Tigris, and the western side of the Persian gulf as far as al Ojair. It is the port of the extensive districts of which Baghdád in Turkey and Kirmanshah in Persia are the commercial centres.

The town consists of a central part containing the bazaars and Turkish Government offices and those of native merchants, and of

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\* This was formerly shallow and difficult.

† Properly al Basra. The present town was founded by Omár, the second Khalífa; an English factory was established here at the middle of the 17th century. and was abandoned about 1820. The name was formerly spelt Bussorah.

extensive suburbs divided by gardens and date groves. The centre of the town lies two miles from the river on a narrow creek called the Asshar, whose mouth is at about the centre of Basra reach ; a good road runs along its bank. The ground is much intersected by canals, and is well cultivated, producing all kinds of fruits. Passengers use long narrow boats called *balam*, which are propelled by poles.

Adjacent to the mouth of the Asshar creek, and opposite the anchorage are a mosque and large suburb, the Arsenal, the Custom house, the Governor General's palace, the British Political Agency, the Turkish Admiralty house, and the houses and offices of European merchants. The French, Dutch, and Persian Consulates stand on the Asshar. On the eastern side of the river is the Naval Hospital, a large building. The Turkish flagstaff is at the Custom house.

The Turkish Squadron consisted in 1889 of two corvettes, an armed despatch boat, and a number of small revenue sailing vessels.

The population within the walls is estimated at 40,000 : of which 1,000 are Jews, and 400 Christians ; a small number of officials only being Turks. There are some 60 Europeans and natives of India, and the rest of the population is Arab.

With the substitution in late years of date and wheat cultivation for that of rice in the neighbouring country, a remarkable improvement in the climate has taken place. Malarious fever is now rare. The northwest wind which prevails in the hot weather is now dry and hot. The month of September, when the marsh formed by the overflow of the Euphrates, west of Basra, is drying up is the least healthy season. July, August and September, are intensely hot and December and January cold with often frost. The rest of the year resembles the spring and summer of Southern Europe.

**Communication.**—The mail steam-vessels from Bombay run weekly to Basra, and it is also visited by other steam-vessels from India and European ports. The Tigris Steam Navigation Company run two river steamers to Baghdád in connection with the mails ; and there is a weekly Turkish line of river steam-vessels.

**Trade.**—A considerable trade is carried on with India, which has immensely increased since the mail steam line has been established. Much trade is still carried on by native craft. Horses, dates in great quantities, rosewater, corn, wool, hides, a little cotton, carpets, ghee, &c., are exported, also liquorice root and henna, which grow abundantly on the banks of the river ; the imports being piece goods, rice, sugar, coffee, metals, spices, cocoa-nuts, indigo, &c., from India. The annual value of the date crop is about £300,000. English merchants settled at Baghdád carry on trade with England by sailing and



steam-vessels, direct to this place. There are now five European firms established here.

The mail steamers keep a supply of coal here, and a vessel might purchase as much as required.

**Anchorage.**—A ship should anchor off Basra in 4 to 5 fathoms in mid-channel, a little above the entrance to the creek, the water being cleaner, and moor with open hawse to the westward. At Makíl a vessel should anchor as far from the west bank as possible, as the current is less violent.

**Telegraph.**—The Turkish telegraph office receives messages for all parts of the world.

**Quarantine** regulations are strict, but need not involve much delay. The office is on the north side of the entrance of Basra creek.

**Makíl** is about 4 miles above Basra, and one mile beyond the end of Basra reach, the river here turning more to the westward. It belongs to the Baghdád English merchants. There is a large square building with a flag-staff. It is sometimes visited by government vessels, but previous permission must be obtained from the Turkish authorities.

**Mud Dock.**—In the yard belonging to the River Steam Navigation Company there is a tidal mud dock on the river bank, about 280 feet long, and capable of taking a vessel of 9 feet draught; the entrance has to be closed with mud and earth, and blocks laid. The dock is dry at low water. The yard is under the superintendence of an English engineer.

**Tide.**—The tide in the river is about 6 hours later at Basra than at the bar, the rise and fall is also much less, probably not more than 6 feet. The strength of the ebb in the river varies from 3 to 6 knots, that of the flood from 2 to 4 knots; the ebb stream being about double the duration of the flood. If at anchor in the river during the ebb, plenty of cable will be required, especially if a shamál is blowing.

**Least depth.**—The Shatt al Arab river above Makíl is navigable for small vessels, 14 to 15 feet draught, from Basra as far as Kúrna (called locally the garden of Eden), the junction of the Tigris and Euphrates, about 49 miles above Basra, and about 120 miles from the bar. The rise and fall of the tide is felt for about 30 miles beyond Kúrna, but the stream always runs down, the rise and fall gradually decreasing to nil.

**Basra to Baghdád.\***—The distance from Basra, on the Shatt al

\* From remarks made on a passage from Basra to Baghdád, by Commander J. E. Pringle, H.M.S. *Vulture*, 1880.

Arab, to Baghdád, on the Tigris, is about 310 miles in a direct line, but 540 miles by the river Tigris. The channel of the river Tigris has no dangers in its bed, except a few remains of ancient brickwork. Cultivation ceases almost entirely 150 miles above Basra; the districts thence to Baghdád being devoted to the breeding of sheep, horses, and camels. The population is scanty.

**Draught for vessels.**—As a general rule vessels drawing 3 feet can ascend the Tigris to Baghdád in the dry season, and 5 feet when the river is high; these being the limits of draught for rapid navigation. It is probable, however, that vessels of 6 feet draught, or more, might ascend by watching the rises in the months of May and June. The most difficult part of the navigation commences some 30 miles above Kúrna, and continues northward about 80 miles, where the river narrows with sharp turns.

In the month of December the first rise, generally about one foot, occurs from rains, which in January, February, and March keep the river fairly full. In April the snows of Armenia beginning to melt, the river again rises; and in May and June is at its highest. The river falls in July and August, and is at its lowest in September, October, and November. A rise of the river at Mosul takes 3 to 4 days to reach Baghdád, and the same time thence to Kúrna.

The two English steamers employed between Basra and Baghdád are of the American-river-type, with disconnected engines; the larger one is 230 feet long and 45 feet breadth across the paddle boxes.

Native boats of 30 tons, with 15 hands, take 30 or 40 days in tracking to Baghdád.

**Passage down the Shatt al Arab.**—In the passage down there is generally a fair wind. A large steam vessel should wait at Fao until she begins to swing to the flood, in order to be at the outer bar at high water. After passing Fao, the pilots make a slight zigzag course, so as to shoal first on one side and then on the other, but since the buoys have been laid down, a course is shaped from one buoy to another: a course is steered E.S.E. for Khárag, as soon as you deepen over the bar to 5 fathoms. (*See Chap. III.*)

The soundings on this course will be 15 fathoms in Khor Kafka, then shoal to 7 on the tail of the rocky bank off the Maidán Ali, afterwards overfalls of 15 to 8 or 9 fathoms; the water at last increasing regularly after being clear of the different khors off the river. In a strong shamál or in a south-easter, the pilots will not take a sailing vessel over the bar.

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C.C. July 1 / '95

*Hydrographic Notice.*

[ No. 8 OF 1895. ]

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NOTICE No. 1

RELATING TO

PERSIAN GULF PILOT.

[THIRD EDITION, 1890.]

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PUBLISHED BY ORDER OF THE LORDS COMMISSIONERS OF THE ADMIRALTY.

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LONDON:

PRINTED FOR THE HYDROGRAPHIC OFFICE, ADMIRALTY,  
BY DARLING & SON, LTD., 1, 2, 3, & 5, GREAT ST. THOMAS APOSTLE, E.C. ;

AND SOLD BY

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1895.

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*Price Threepence.*



*The existence of this Hydrographic Notice is to be entered on the opening page of "Persian Gulf Pilot." The information contained in it is to be carefully considered.*

*One of the copies is to be cut up and inserted in the pages affected of the book. The other copy is to be retained intact, for reference.*

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*Hydrographic Notice.*

[ No. 8 OF 1895. ]

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NOTICE No. 1

RELATING TO

PERSIAN GULF PILOT.

[THIRD EDITION, 1890.]

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The following information relating to the Persian Gulf has been derived from the Surveys and Remarks by Commander R. F. Hoskyn, and Lieutenant G. S. Gunn, R.N., Marine Survey of India, 1890. To this has been added information from other sources.

The paragraphs follow the order of the paging of the Pilot, the pages referred to being given in the margin.

This notice cancels all Notices to Mariners previously published relating to Persian Gulf Pilot.

*All bearings are magnetic. Variation 0° to 0° 30' Westerly.*

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**DABAI.**—The statement in paragraph 6 that Dabai is recognisable as being the last town on the coast \* \* \* is now incorrect, as a small village with date trees has sprung up in a position about 4 miles to the south-westward of Dabai.\*

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\* Information from Commander H. H. Dyke, H.M.S. *Sphinx*, 1892. See Chart. Persian Gulf. No. 2,837a.



H.M.S. *Sphinx*, on 19th October 1889, when in lat.  $25^{\circ} 23' N.$ , p. 127.  
long.  $52^{\circ} 35' E.$ , obtained a sounding in 7 fathoms, where no soundings were previously marked. From the position of the sounding, which was taken at 6 a.m., Halúl island bears N.N.W.  $\frac{1}{2} W.$ , distant 20 miles.\*

**Bahrain harbour approach.—Bu Atháma.—Shoal.**— p. 140.  
The Commander of the British India Steam Navigation Company's steam-vessel *Kilwa* reported that on 6th June 1890, when on the passage from Bahrain to Bushire (Abu Shahr) he obtained soundings of 3 and 5 fathoms, near the position of Bu Atháma, north-eastward of Bahrain harbour. This shoal, bottom distinctly visible, appeared to extend about a quarter of a mile East and West, by the tide ripples that were seen round it. Approximate position, lat.  $26^{\circ} 52' N.$ , long.  $50^{\circ} 56' E.$ †

**JASHAK BAY.—Shoal.**—The existence of a shoal, with p. 199.  
15 feet on it at low water, lying in the fairway of approach to the anchorage in Jáshak bay, where  $3\frac{1}{4}$  fathoms has heretofore been shown on the Admiralty charts, has been reported by Commander Dyke, H.M.S. *Sphinx*. The shoal lies with the following mark and bearings:—Tank and beacon in line, N.  $87^{\circ} E.$  (the beacon distant  $1\frac{1}{2}$  miles). Jáshak fort, N.  $12^{\circ} E.$  Consequent on the above, the leading mark "Tank and beacon in line E.  $\frac{1}{2} N.$ ," has been removed from the plan of Jáshak bay.‡

**The Flat.—Ras Dastakan.**—H.M.S. *Mariner*, in July 1890, p. 228.  
passing southward of the Flat obtained several casts of 6 to 7 fathoms with east extreme of Jezirat Tanb bearing S.E.  $\frac{1}{4} E.$  and east extreme of Jezirat Nabiyyu bearing S. by W.  $\frac{3}{4} W.$  It would appear probably that the Flat is extending south-westward.§

**Jezirat Tanb.**—A rock on which the Government steamer p. 232.  
*Laurance* is reported to have struck in the year 1889 is said to lie on the north side of Tanb island. The shore should therefore be approached with caution.§

\* See Chart:—Persian gulf, No. 2,837b.

† Originally published in Notice to Mariners, No. 409 of 1890. See Chart, No. 2,837b.

‡ Originally published in Notice to Mariners, No. 146 of 1891. See Charts:—Persian gulf No. 2,837a; Persian gulf entrance. No. 753; plan of Jáshak bay, on sheet No. 38.

§ See Chart, No. 753.



**Ras al Mutaf.**—According to soundings obtained by H.M.S. *Sphinx*, 1892, this bank has altered since the date of the last survey, and is probably more to the westward and southward.\*

**Baraki.**—*Erratum.*—Line 25 from top for “town” read “tower.” p. 270.

**Rishahr point.**—Three telegraph cables are landed at Rishahr p. 276. point, by which there is communication with all parts. On the east side of the point landing is practicable in fine weather.

The cable house on the cliff above is painted white. The telegraph buildings with flagstaff, about three-quarters of a mile inland, are conspicuous.†

### BAHMISHIR RIVER AND SHATT AL ARAB.

The following remarks regarding the Bahmishir and Shatt al Arab rivers have chiefly been compiled from the survey made and information obtained in November and December 1890, by Lieut. G. S Gunn, R.N., under the direction of Commander R. F. Hoskyn, R.N., in charge of the Marine Survey of India. These remarks supersede those given in Persian Gulf Pilot from page 294 line 12, to page 299 line 22.‡

**Khor Bahmishir**, on the western side of Maidan Ali, is the channel leading from the sea to the Bahmishir river. The banks on either side only dry at low water, so that the khor is difficult to distinguish. The channel is tortuous and shallow till near the Bahmishir mouth. Vessels drawing 7 feet can enter the Bahmishir river at low water, the least depth to be passed over being a bar with 8 feet, soft mud, at 10 miles from the mouth. Inside the bar the depths vary from 10 to 12 feet; and at half a mile from the mouth there is as much as 15 feet.

**Bahmishir river** is the natural mouth of the Karun river and is about 54 miles in length (40 miles in a straight line) from the mouth to Muhammera. The following description is from an examination made in one day only in 1890. It appears to be navigable for vessels drawing not more than 7 feet to a distance of about 30 miles from its mouth. There are two sharp bends near the middle of its course, the first at 11 miles from the mouth. Its breadth near the mouth is from 3 to 4 cables, but in the northern

\* See Chart:—Persian gulf, No. 2,837*b*.

† See Chart:—Persian gulf, No. 2,837*b*; Abu Shahr. No. 27.

‡ See Chart:—Mouth of the Euphrates, Shatt al Arab, and Bahmishir rivers. No. 1,235.





half of the river it is only  $1\frac{1}{2}$  cables broad in some places. The banks near the mouth are sloping, and of soft mud, covered with a coarse grass above high water mark; a few miles farther up, the banks are harder and steeper. At about 25 miles from the mouth there are villages and date gardens, and these line the banks for most of the way to Karun river. The northern part of the river for about 15 miles is very shallow and uneven, some of the banks of mud drying almost across the river at low water.\* p. 276.

**Khor al Amayyah** is a gut running nearly parallel with the Shatt al Arab and westward of Khor Bahmishir, with soundings decreasing from 11 fathoms at the southern end, to 3 and 2 near the north-east part of Marakat Abadán.

This khor does not enter the land, but bends round at a distance of 3 miles from the coast, and taking a west direction, joins the Shatt al Arab below its entrance south of the bank off Barr Nasár, which is visible at low water; the east and west portion of this khor is called Khor al Nasár. Before it joins the Shatt al Arab the soundings decrease to 8 and 9 feet at low water, the extent of shoal water being about one mile.

**Khor al Khafkah** is the western channel into the Shatt al Arab, and the only one used by steamers. It lies between the two large banks Marakat Abadán and Marakat Abdalla, and is 11 miles in length from the outer buoy to Ras al Bisha, the extreme of the land south of Fao. It has a general depth of 8 to 11 feet at low springs. There is a bar with only 7 feet at low water 9 miles from the outer buoy; above this the water soon deepens to 12 and 15 feet, and there are no further obstructions.

Both the above-mentioned banks are of soft mud, the Marakat Abadán only uncovers, near its north-west extreme, at springs, but the western or Abdalla bank at low water for a distance of about 6 miles from Ras al Bisha. They both slope rather gradually towards the khor, but the edge of the Abadán bank is often defined in fine weather, and a light breeze, by the difference in the ripple.

**Draught of vessels.**—Vessels drawing more than 7 feet must wait for the flood to cross the bar. At high water springs (night tide in winter and *vice versa*) vessels of 17 feet draught can be navigated up the Shatt al Arab as far as Basra.†

At neaps the draught is restricted to 15 feet.

\* The Indian Marine steamer *Comet*, in December 1890, drawing 3 feet, grounded twice in steaming up the Bahmishir.

† H.M.S. *Sphinx* has frequently proceeded up to Basra and down again in charge of her own officers.



As the mud is very soft, powerful steamers are often forced through a foot or more of mud, and vessels load to the actual depth available at the bar. p. 276.

**Buoys.**—Five buoys, the property of the British India Steam Navigation Company, are laid down in the Khor al Khafkah, and must all be left on the port hand in entering the river. The outer buoy, a large nun buoy painted black with a staff and ball, is placed near the outer edge of the shoal water, and is 15 miles from Fao.

The second and fourth buoys are can buoys and of a good size, but the third and fifth are merely small casks and are often not to be seen.

**Caution.**—The buoys are not to be depended on, as they often shift their position during gales. It is not correct to say that the buoys are shifted according as the bar changes; sometimes buoys have drifted and been replaced, but there is no system of shifting. It is doubtful if the bar does change appreciably.

**Tides.\***—It is high water, full and change, in Khor al Khafkah and Khor Bahmishir at 11h. 30m. Springs rise 10 feet, neaps rise 8 feet.

In summer the day tides, and in winter the night tides are much the higher. In the winter the heights of the day and night high waters are more nearly equal at neaps, but differ from 3 to 4 feet at springs; the difference in the heights of the day and night low waters is greatest at neaps, being then 4 to 4½ feet, and at springs from 1½ to 3 feet.

The highest tides occur in April and the lowest generally in October and November. The tides are influenced by the weather, but not to any great extent, and may be called fairly regular.

The streams continue to run for a considerable time after high and low water, as will be seen by the following table, but when a shamál or north-westerly wind is blowing, the time of slack water agrees more nearly to that of high and low water.

After a moderate shamál had been blowing for five days the water fell 6 inches lower than at any other time.

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\* These remarks apply chiefly to the months of November and December, the time of the survey, said to be the best time of the year for such operations.



A summary of the tidal streams off the two rivers may be shown p 276, as follows :—

	KHOR BAHMISHIR.				KHOR AL KHAFKAH (SHATT AL ARAB.)			
	Springs.		Neaps.		Springs.		Neaps.	
	Flood.	Ebb.	Flood.	Ebb.	Flood.	Ebb.	Flood.	Ebb.
Strength, in knots	1½ to 2	1 to 1½	1 to 1¾	1 to 1¾	1 to 1½	1 to 2	1 to 1¾	1 to 2
Average duration of flood and ebb streams after high and low water, in minutes.	40	45	30	20	80	30	Irregular.	50
Duration of slack water ... ..	25 mins.		20 mins.		15 to 30 mins.		15 to 30 mins.	

**Pilots.**—To a stranger without a chart of the approaches to the river, pilots are indispensable (as already stated at page 47).

They can be taken on board by ships proceeding to the river, at Bushire or sometimes at Linja, and they expect to be landed on the return voyage at the same place. The rate of pilotage is 15 keráns per foot draught for each time they cross the bar ; and 1½ keráns per day as long as the vessel remains at Basra or Makél.

**Fao.—Telegraph.**—At 3½ miles from Ras-al-Bisha is Fao, a small village of 400 inhabitants, chiefly herdsmen and cultivators of the soil.

At Fao the terminal station of the British Persian Gulf telegraph cable was established in 1864. Messages are received here for all parts.

Two white iron-roofed offices have been built here, one British for cable messages, and the other Turkish, for the land line. There is a Turkish custom house and quarantine department. The Basra steamers touch here on their way up and down.

**Light.**—A *white* light is shown at Fao from a post about 40 feet high, but it can be seen only about 2 miles.

**Landing place.**—The landing place at Fao is at a rough jetty made of stones over the mud, a little below the light post ; the quarantine ground is at the top of this jetty. There is deep water a few yards from the end of the jetty.



**SHATT AL ARAB** is the name by which the united stream of the Tigris and Euphrates is known to the Arabs ; it is a fine river, navigable for vessels that can cross the bar to Basra, or to the distance of 70 miles from the outer buoy. Its breadth near the mouth averages about  $1\frac{1}{2}$  miles, with soundings of 12 to 15 feet at low water. p. 276.

The banks are very low on either side for the entire distance, from the entrance as far as and beyond Basra, and intersected by numerous canals for irrigation ; the land is often under water, except small raised banks between the plantations. The belt of land near the river from Fao to a few miles above Kurna is exceedingly fertile and produces very fine dates, also fruit and vegetables of various kinds, with grain, &c.

At the back of the date groves which extend half to 2 miles from the bank, all is a desolate desert or swamp. There are large herds of cattle and buffaloes along the banks of the river ; the latter often swim across to graze on the islands. Many wild hogs are found along the banks. On the ebb the water is fresh even at Fao and fit for drinking, except in autumn when the river is low it is slightly brackish ; 10 miles further up it is at all times fresh. Between the plantations of trees are sandy tracks of land along the banks, which are uncultivated, although doubtless equally fertile with the rest. Supplies of fruit, vegetables, and cattle, can often be obtained at the villages on the banks, while waiting for the tide.

The land on the east side, south of the Hafar, which forms a long narrow island between the river and the Bahmishir is called Abadán. The Shatt al Arab from the mouth to within 16 miles of Basra, is the boundary between Turkey and Persia.

After entering between the regular banks with vegetation. the eye is the chief guide. The seaward and lower part of the banks is all of soft alluvial mud, thickly grown with reeds and coarse grass : it is almost impossible to land, so soft is the mud.

The appearance of the two banks at the mouth of the river is very different, the right or Fao bank being thickly planted with dates, while the left or Persian bank is quite bare till about two miles above Fao. Ras-al-Bísha is said to be extending to the southward, and the small size of the date trees on its extreme seems to point to that.

It is advisable not to land anywhere near the fort.





**Directions from Kharag to Shatt al Arab.**—It is now the p. 276. custom for vessels to make for the outer buoy off the Shatt al Arab, which can be easily made out in moderate weather, but if the weather be thick and the ship's position uncertain, vessels should endeavour to strike soundings on the Maidan Ali, and steer westward in 5 fathoms until the buoy is sighted. From the buoy steer a course N.W.  $\frac{1}{4}$  W., so as to pass to the eastward of all the buoys and when the south end of the Turkish fort bears W.S.W. the course should be altered to N.W. by W.  $\frac{3}{4}$  W. to proceed to the anchorage off Fao, or up the river.

**Directions for making the Bahmishir river.**—As there are probably no regular pilots for the Bahmishir, a baghala man accustomed to the river should be obtained if possible. Without any local assistance it would be advisable to start from the outer buoy of the Shatt al Arab with a rising tide and from 2 miles S.E. of the buoy to shape a course N.N.E.  $\frac{3}{4}$  E. (allowing for the flood tide setting to the N.W. if necessary) crossing the deep water of the Khor al Amayyah which is here about  $1\frac{1}{4}$  miles wide, and when the water shoals to 14 feet at low water or when having run  $4\frac{1}{2}$  miles turn up N.W.  $\frac{1}{4}$  N.; here great caution is necessary, and it would be prudent to anchor when two miles on this course have been run, and verify your position by sending a boat to sound; the course can then be continued for another 3 miles, when the reeds off Barr Nasár will probably be sighted bearing about N.W.  $\frac{1}{4}$  W.

The course should then be altered to N.N.W.  $\frac{1}{4}$  W. for another 2 miles, or when the centre of the Barr Nasár reeds bears west; from here the course will be North for 3 miles, or until the deep water S.E. of the mouth of the river is struck. While on this last course the reeds at the mouth of the river will begin to show up, a tall square clump of reeds marking the south point of the mouth. Once in the river the deepest water will be found by keeping close to the bank on the concave side, crossing over at each bend.

**Karun river.**—There is now a fortnightly communication pp. 301-2. between Ahwaz and Shuster by way of the Shateil. This branch has the advantage of being broader than the Gager or East branch, and is the natural course of the Karun. Navigation beyond Ahwaz being barred by the rapids at that place, cargo is transferred from the steamers which ply on the lower part of the river.



The strength of the current in a full river is 4 to 5 knots an hour, p. 302. and in low river one or  $1\frac{1}{2}$  knots. There is least water in the Karun in the months of August to November inclusive.

**Ab i Diz.**—The steamer *Shushan*, drawing 2 to 3 feet, in August 1891 ascended the Diz river. Starting from Bund-i-Kir, and entering the river by a channel only 20 yards wide, the vessel proceeded for  $1\frac{1}{2}$  hours through a tortuous channel having only 3 feet water. The channel then deepened to an average depth of 9 feet, except where barred by long sand banks at about every 5 miles; in the crossings depths of only 3 feet were found.

On the third day the *Shushan* arrived at Kut Bunder. Here a reef of rocks extends across the river, over which a straight channel 4 feet deep was found. Passing thence through intricate channels, the vessel arrived at Um-el-Wawieh, a point about 10 miles beyond Kut Bunder, and about 20 miles from Wizful or Dizful by road.

Not being able to proceed any farther, the return journey was on the following day commenced, during which much difficulty was experienced in grounding and striking in the bends. The ascent occupied 51 hours and descent 36 hours.

During the winter and spring the Diz can be navigated as far as Kut Abdi Shah, a point about 80 miles by river and 10 miles by road from Dizful.

The river from Bund-i-Kir to Kut Abdi Shah follows a winding course through flat uncultivated country and immense jungles.

W. J. L. W.

*Hydrographic Department,  
Admiralty, London.*

*May, 1895.*







*Old*

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